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ABSTRACT

Provided are some of the proceedings of a conference on assessment of competency based teacher education (CBTE) programs in special education. Presentations by conference participants cover the following topics: research findings regarding evaluation and validation in performance based teacher education (Robert S. Soar); the New York state education department's assessment plans required in teacher education program proposals (Vincent Gazzella); the application of systematic observation methods (such as computer assisted teacher training) in research and training in special education (Melvyn I. Semmel); and models for research and development in performance based teacher education (Frederick McDonald). Summaries are provided of potential contributions and concerns regarding assessment processes of public school teachers (James G. Ward), public school administrators (Gilbert Duken and Michael Solimando), and teacher education students (Karen Cochran, Nathan Glasper, Karen Kowalchuck, and Margaret Maxwell). Also included are worksheets (Patricia M. Kay) which are noted to be based on a model for building an internally valid assessment system. In a conference evaluation (Alice Kornblith and Cecile Segal), it is concluded that although the conference was well organized, more technical expertise and individual consultation were needed. (SB)

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ASSESSMENT IN CBTE:
THE SEARCH FOR EVIDENCE

EDITED BY
PATRICIA M. KAY

PROCEEDINGS OF A CONFERENCE HELD
IN GLENMONT, NEW YORK, OCTOBER 1974
AND SPONSORED BY

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
DIVISION FOR HANDICAPPED CHILDREN

IN COOPERATION WITH

THE COMPETENCY BASED TEACHER EDUCATION PROJECT IN SPECIAL EDUCATION
CENTER FOR ADVANCED STUDY IN EDUCATION
THE GRADUATE SCHOOL AND UNIVERSITY CENTER OF THE CITY UNIVERSITY OF NEW YORK
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ASSESSMENT IN CBTE:
THE SEARCH FOR EVIDENCE

PROCEEDINGS OF A CONFERENCE

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PREFACE

In June, 1972, the Research Fund of the Board of Regents of the University of the State of New York, through the Division for Handicapped Children of the State Education Department was awarded a grant to explore the competency based hypothesis and its implications for teacher training particularly with regard to providing alternative training strategies and models for the certification of teachers (The CBTE Project in Special Education). The original objectives of the project were to support CBTE research and development underpinnings in that context. An action of the Board of Regents in September, 1972 gave great visibility and immediate relevancy to the work of the CBTE project. In September, 1972, the Board of Regents endorsed a competence based, field centered approach to the professional preparation of educational personnel, effectively mandating that college and university teacher preparation facilities actively pursue a competence based approach in the professional training and educating of prospective public school personnel.

New York State defines a competence based program of preparation as one which provides acceptable evidence of program formulation through the collaborative efforts of a consortium of representatives of colleges and universities, school district administration, and professional staff of school districts. So defined, a competence based system permits the widest variety of program design since it does not prescribe any set of course or learning activities. A schedule established by the State Education Department's Division of Teacher Education and Certification called for all college and universities presently preparing elementary and special education personnel to submit competence based training program proposal plans by February 1, 1975 to be reviewed by program registration.

The Regents mandates facilitated the CBTE Project Policy Board decision to widen the horizons of the CBTE Project. Recognizing the many difficulties faced by the consortia of over forty degree granting institutions in this new style of certification, the CBTE Project, in collaboration with Syracuse University, hosted a conference in May, 1974 in Glenmont, New York to introduce some components of the competency based process to members of the special education community. The Proceedings of the first Glenmont Conference have been published in Design for Competence Based Education in Special Education.

As consortia continued to wrestle with the collaborative process of program design, a chief area of focus clearly emerged, the complex but essential congeries of tasks involved in assessment. The multifaceted concept of assessment can embrace the identification of competencies, the measurement of success in competency acquisition, the evaluation of training strategies and programs in facilitating that process, and research to validate competencies. The CBTE project has been indeed fortunate in having Dr. Patricia M. Kay as principal investigator of one project component, the City University of New York Competency Based Teacher Education Project in Special Education which is itself part of the university wide CBTE research and development project. Dr. Kay's unique awareness of the complexities of CBTE training, her knowledge in the area of assessment, her previous experience with the special education community in New York State, and the capabilities of her staff led the CBTE Project Policy Board to invite Dr. Kay to arrange a second conference at Glenmont, New York on October 29, 30, and 31 as a cooperative venture with the State Education Department, Division for Handicapped Children. This Dr. Kay graciously consented to do. The conference and this document resulted from a collaborative effort exemplary of the finest professional team effort.

If the conference was a successful first step down the long road to growth in a truly professional grasp of valid assessment procedures, a large measure of credit belongs to the sensitive and generous members of the consortia. Typically sensitive to the needs of children with handicapping conditions, these members of the special education community have given generously of their time, talents and professional concerns for improving teacher training. The tooling up process towards a competency mode in a collaborative way has been, and may be expected to continue to be, a highly complex, time consuming, costly, and energy draining process. It is a tribute to the consortia members that this tremendously impressive group of hard working people brought to the conference intelligence, energy and commitment far beyond a desire to meet a mandate, however motivating the latter consideration. Whatever degree of success CBTE may eventually meet or fail to achieve, the CBTE project in special education has found a full measure of personal and professional satisfaction in facilitating the interactive efforts of the consortia members. Both conferences in the Walden-like Glenmont atmosphere fostered the personal and professional growth which thrives only in the honest, authentic, creative and self-renewing dialogue of capable and committed people. Competence based education is meant, in its best forms, to foster self-development, self-renewal, on an individual and program level. The planners hoped that the Glenmont CBTE Conference might be on target with what John Gardner wrote of self-renewal:

> "But the development of one's talent
> is only part, perhaps the easiest part,
> of self-development.

It is a life-long process
that brings us to the recognition
that the ever renewing society
will be a free society.
It will understand that the only
stability possible today
is stability in motion.
It will foster a climate
in which the seedlings of new ideas
can survive and the deadwood
of obsolete ideas can be hacked out.
Above all it will recognize
that its capacity for renewal
depends on the individuals
who make it up.
It will foster innovative, versatile,
and self-renewing men and women
and give them room to breathe."

This document recounting some of the proceedings at Glenmont II is offered in the hope that, like the conference, it may contribute toward the self-development and self-renewal which should be hallmarks of any competence based education program conceived and nurtured by purposeful people who allow themselves the time and room to breathe.

- Joseph T. Gilmore

ACKNOWLEDGEMENTS

While the organization and design of the "Glenmont II" conference and the arrangements for these proceedings were an important aspect of the City University of New York's Competency Based Teacher Education Project in Special Education, both the conference and the proceedings were, in all respects, a truly collaborative effort. Neither could have been successful without the contribution, advice and assistance of many people.

Grateful acknowledgement is extended to Dr. Herman Saettler, Acting Director, Division of Personnel Preparation of the U.S.O.E.'s Bureau of Education for the Handicapped, for his support of the CBTE project in general and specifically for his encouragement in all dissemination aspects of the venture. Gratitude is also extended to Mr. Raphael F. Simches, Director, Division for Handicapped Children, State Education Department, and Dr. Ronald Ross, Chief of the Division's Bureau for Mentally Handicapped, for their initiation and continuing support of the project; to Dr. Max Weiner, Director of the Center for Advanced Study in Education, the Graduate School and University Center of CUNY, for his efforts on behalf of the university's competency based projects; and to Dr. Gerald Leinwand, Dean of the Bernard Baruch School of Education, Dr. Jeff Golland, Education Department Chairman, and all those staff members at Baruch who help provide the services necessary for the "home base" of a project. The New York State Policy Board for Competency Based Teacher Education in Special Education also deserves thanks for their commitment to these efforts, their assistance in planning, and their willingness to undertake conference responsibilities above and beyond the call of duty.

Special thanks are due to Dr. Vincent Gazzetta, Director, Division of Teacher Education and Certification and his staff members, Drs. Charles Mackey, William Boyd, and Michael VanRyn. Their presence during the three day conference as well as their willing assistance at all times to help us help others sort out the intricacies of CBTE issues is very much appreciated.

Father Joseph P. Ganley C. M. and his staff provided the beautiful retreat atmosphere that encouraged exchange of ideas. Joanne Moran Gilmore's organizational and creative abilities enhanced that atmosphere. Dr. Joseph Iraci and the staff of the New York State Special Education Instructional Materials Center, particularly Mr. Al Sinclair, donated their equipment and able assistance for recording ideas for posterity. All of the conference speakers and consultants whose comments are included in this proceedings gave the participants much food for thought. Thanks are extended to all for their special contributions.

The Albany staff of the CBTE project in Special Education, notably Mrs. Marie Stein and Ms. Faith Schullstrom were extremely helpful in conference arrangements. Special mention must be made to Mr. Joseph T. Gilmore, State Project Coordinator whose assistance in carrying through with conference arrangements and whose unflagging encouragement for all aspects of the project are very much appreciated.

Finally, accolades and appreciation are extended to the CUNY CBTE staff, Mrs. Cecile Segal, Mrs. Carolyn Gethers, Miss Alice Kornblith, Mr. Larry Kilian, Miss Barbara Cohen and Mr. Joseph Healy. Their capable assistance and unique abilities to cope with the unforseen are especially valued.

Patricia M. Kay

INTRODUCTION

Patricia M. Kay
Baruch College of The
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Although teacher educators across the country are currently struggling with the vast array of complexities inherent in competency based teacher education, it is likely that nowhere are those issues receiving more attention than in New York State, particularly at those institutions providing professional preparation for teachers of handicapped children. Without doubt, the most difficult of the complex CBTE issues and yet the one that is most central to CBTE is assessment. CBTE assessment is the search for evidence that teaching candidates possess the knowledges, skills and attitudes necessary for entry into the profession. That statement appears innocent enough - but has implications for initial selection of competencies, evaluation of instruction and programming, and the validation of competencies as well as for the measurement of candidates' attainment of competencies.

Assuming that there are no simple answers to questions about assessment and that solutions to the problems raised will require the attention of all members of the education community for some time to come, the purpose of the "Glenmont II" conference was to provide a context within which the special education consortia from New York State could begin to develop both long and short range plans for addressing the assessment dimensions of CBTE.

There were four kinds of activities planned for the conference that were designed to assist the thirty-one attending consortia in promulgating their own assessment plans. There were large group meetings designed primarily for input. Robert Soar, Melvyn Semmel and Frederick McDonald spoke at those sessions addressing technical issues of methodology, research models, observation techniques and results of past research which might form a base for competency identification, measurement, and further research. Those authors' three selections in this Proceedings help to provide the technical assistance dimension so necessary to reliable and valid assessment development. Also in large session, Vincent Gazzetta spoke on "CBTE Assessment in New York State" outlining the state education department's expectations for assessment plans required in teacher education program proposals.

The second kind of large group activity at the conference is documented here as the "Contributions and Concerns" section.

In these sessions, James G. Ward spoke to the potential contributions that public school teachers can make to the assessment processes as well as the concerns they share about it. Gilbert Duken and Michael Solimando addressed the potential contributions and concerns of public school administrators and teacher education students Karen Cochran, Nathan Glasper, Karen Kowalchuk, and Margaret Maxwell formed a panel to discuss the student point of view about CBTE assessment. The summaries of all the "contributions and concerns" presenters help to sort out roles and responsibilities and provide many stimulating thoughts that will, undoubtedly, become of the focus of discussion in numerous consortia meetings.

The third kind of activity designed to assist consortia in the development of assessment plans was the small group meeting where members of consortia could actually sort out the issues and begin the planning processes. Facilitators were assigned to each group and a consortium worksheet was provided to be used either as a guide, a focus for discussion, or a simulation of consortial assessment plan development. The worksheet used at the conference is also included in these proceedings.

The final kind of activity that was planned into the conference was free time - actually, a kind of non-activity. During that unassigned time, participants could used the resource center that was available, talk with the facilitators and consultants informally, continue consortium meetings or simply stroll around the beautiful grounds and digest the multitude of ideas that were presented as conference menu.

How well the conference itself fulfilled it's goals is difficult to assess. The real test probably came after the participants left Glenmont and may be somewhat apparent in the assessment plans that each consortium submitted to the Division of Teacher Education and Certification in January and February, 1975. An attempt at objective conference evaluation was undertaken, however, and the results are presented here by Alice Kornblith and Cecile Segal. Their evaluation was based on conference objectives that were made public at the outset.

The objectives of this document are highly similar to those of the conference. These proceedings are offered in the hope that they will assist readers in becoming more aware of the technical, practical, and political dimensions of developing a CBTE assessment strategy and in developing heightened awareness of both specific techniques and sources of technical assistance that might be employed in moving toward CBTE assessment systems. Additionally, readers can find assistance in understanding New York State's expectations for assessment plans as well as the potential roles that may be filled by public school teachers, administrators, and teacher education students.

PROGRAM EVALUATION AND VALIDATION IN PBTE

Robert S. Soar
University of Florida

Introduction

One of the critical needs of the PBTE movement is the need for program evaluation and validation -- a need which seems uncertain to be met. As Rosner and Kay (1974) comment,

> "If the educational community in general and teacher educators in particular do not fully understand and buy into the heavy analytic and research demands of CBTE, then CBTE will not be realized. The multiplicity of CBTE-related definitions will expand and successes in the name of CBTE will be proclaimed when specific or peculiar aspects of the CBTE definitions are realized (i.e., modularization, systematization, personalization, individualization, field orientation, etc.). In that case, the long-range reform effort will go down in history as another bandwagon in the parade of educational faddism."
> (p. 293)

Among the concerns that we hold for the PBTE movement are that heavy expenditures of money, time and effort may be going into teaching student teachers skills which will make no difference to the pupils they ultimately teach; that only in unusual cases, if at all, is the research being done which will test whether this is true. These concerns also stem from the fact that the research base we have for teacher education is exceedingly thin, and that we do not know the limits of its validity (i.e., for what teacher behavior, for what objective, for what group of pupils). Further, such questions are not even asked very often.

This paper, then, will present selected findings from our research over the past 14 years in the hope that they may add to the knowledge of the teacher behaviors which are related to particular kinds of pupil gain; but also with the hope that they will point to some of the problems of designing evaluation and validation plans, and collecting and analyzing the data.

Some Findings -- with Implications for Program Validation

Since the terms evaluation and validation will be used in somewhat different senses here than is sometimes true, it seems useful to clarify the distinction. Evaluation, as used here, will refer to measuring the behavior of student teachers, at various points in the training program or as they teach in the field, to answer questions such as whether the graduates of this program teach differently from graduates of some other programs, or whether the specific competencies toward which a program is directed actually are realized in the teaching behavior of its graduates. Validation, on the other hand, will be used to refer to the question of whether a specific teacher behavior has the effect it is believed to have on pupils -- for example, do teachers who emit greater amounts of positive affect in fact produce greater subject-matter growth in the pupils they teach; or do larger amounts of teacher-pupil interaction at the higher cognitive levels (Bloom's taxonomy) result in increased pupil ability to process information or to deal with abstractions? That is, are the beliefs we hold about the nature of effective teaching in fact true; or better, within what limits are they true? The primary focus here will be on validation of teacher behaviors, but since teacher behaviors are the outcome measures for program evaluation, some of the findings may also have relevance for that problem. The major emphasis will be on findings which have appeared in two or more studies.

The Inverted 'U'

One of the major ways in which classrooms differ from each other is in the extent to which the activities in the classroom emanate from the teacher rather than the pupils. At one extreme the teacher sets the problem, directs the activities in which pupils are engaged, monitors and reinforces the work of pupils, and evaluates the results of their efforts. Pupils have little choice about what they do, how they do it, or the basis on which they will be evaluated. They have little or no "wiggle room". At the other end of the scale, pupils have a high degree of freedom to choose the activity on which they will work, with whom, how long, and the decision as to whether it was useful may be theirs, if the question occurs at all. The teacher is available as a resource, may set outer limits to the behaviors which are permitted, but even these are likely to be broad. Of course these are extremes of a dimension along which classroom scale, with most classrooms somewhere in between.

In four sets of data the findings have emerged that when classrooms were rank ordered from those in which pupils have least freedom to those in which pupils have most freedom, pupil subject-matter gain was lower in classes where pupils had little freedom and increased as the amount of pupil freedom increased. But this was true only up to a point, and beyond that point as pupil freedom increased, gain no longer increased but began to decrease. This is, there was an optimum point, a balance between teacher control and pupil freedom at which greatest pupil subject-matter growth occured. (Soar, 1966 & 1968; Soar and Soar, 1972; Soar and Soar, 1973). Similar results have been found by others (Solomon, Bezdek, and Rosenberg, 1963; Coats, 1966; Brophy & Evertson, 1974). The same relationship has been found for pupil growth in self-concept in two data sets (Soar & Soar, 1973).

Although this seems such an obvious finding as hardly to warrant comment, and although it seems clear that good teachers have understood this for years, researchers have only examined this possibility recently. And it appears to have further implications. Probably the two classroom innovations which are currently being espoused with most vigor are contingency management teaching (or precision teaching, behavior analysis, or other terms) on the one hand, and open classrooms on the other. It seems clear that these two styles of classroom management fall toward opposite extremes of the balance between teacher control and pupil freedom.

The Differentiated "U"

One set of data, and to differing degrees two others, suggest that the balance between teacher control and pupil freedom which is associated with greater pupil growth shifts systematically with the complexity or abstractness of the learning objective. The general principle appears to be that more concrete the task (memorizing the multiplication table, today's list of 15 spelling words, or dates in history) the greater the degree of teacher control which is optimal; but when pupils are involved in complex problem-solving, inferring, abstracting or generalizing, greater pupil freedom is appropriate. (Soar, 1968; Soar & Soar, 1972; Soar & Soar, 1973.) Although this is the general principle, for greatest pupil growth there still appear to be limits to both the teacher control and the pupil freedom which is optimal.

Teacher Control in Three Areas.

There is limited evidence suggesting that it may be functional to distinguish conceptually the control the teacher exercises in three areas: 1) control of the behavior of pupils, 2) control of choice of subject matter, and 3) control of the thinking processes which the pupils use.

In the classroom in which pupil behavior is closely controlled, for example, pupils might only leave their seats to sharpen a pencil, to get materials, or to put trash in the trashbasket, and in each case would return immediately to their seats and resume work. In a freer classroom, pupils may move freely from group to group, socialize as they work, with limited amount of "horse-play" perhaps even acceptable.

With respect to choice of subject-matter in the closely controlled classroom the pupil works with material which has previously been selected and organized for him and his task is to learn it. It may be complex, as in arithmetic, or the interrelationships between environmental conditions and the nature of primitive cultures, but he has no choice in what he is to learn. In a classroom where choice of subject-matter is freer, the pupil may collect and organize his own subject matter, choose, within limits, aspects of interest, and ask questions and suggest ideas in classroom interaction. Under tighter control of subject-matter, questions are only likely to be procedural (details of the assignment, for example), whereas under less control they are likely to be substantive.

In the control of thinking, at one extreme pupils may be restricted to memorizing facts and giving them back on demand. At the other, they may be encouraged to infer, abstract, generalize, hypothesize, to solve complex problems or engage in divergent thinking. For example, pupils who had studied the relation between environment and culture might be asked "What would happen to the Navajo culture if thirty inches of rain feel each year?" (Taba, 1964), or they might not go beyond remembering the characteristics of a particular culture.

The evidence from several studies indicates that most teachers do not distinguish among these three areas. In several studies, control of behavior vs. control of subject-matter and thinking have related in the high seventies to the high eighties. If behavior is tightly controlled, the thought processes and the choice of subject-matter are likely to be controlled as well; or if one is free, all are likely to be free. But limited amounts of data suggest that the effects of freedom of behavior may be rather different from those of freedom of thought processes. As an example (Soar, 1966), a measure of "freeing" but orderly teacher-pupil verbal interaction (indirectness as the Flanders system represents it) was positively related to gain in creativity; whereas a measure which represented freedom of physical movement in the classroom was negatively related to the same outcome measure. In another study (Soar & Soar, 1972) teacher control of thought processes was related to complex achievement growth in an inverted 'U", whereas a measure of teacher control of behavior showed an approximately linear relationship. The distinction between these areas of teacher control may be worth pursuing in program evaluation and validation.

Different Responses to the Same Classroom Experience by Pupils with Different Characteristics

Perceptive teachers have been ahead of educational researchers in the realization that different pupils respond differently to the same classroom experience, or that different kinds of experiences are needed by different pupils for them to grow. There is support for this concept in the data, although it seems clear that this is an area which needs much more exploration than it has had. (Parenthetically, this is a concept which has recently become prominent under the names "trait-treatment interaction" or "aptitude-treatment" interaction". Some examples of this from our data follow. In classrooms in which teachers were relatively indirect, as defined by the Flanders system (that is, they accept, clarify, use pupil ideas, and ask questions, rather than lecture, give directions, criticize or justify authority), low-anxious pupils gained more in creativity than high-anxious pupils did; but in classrooms which were more direct, high-anxious pupils gained more on the same measure than low-anxious pupils did. (Soar, 1968.) Apparently low-anxious pupils were better able to use freedom in thinking than were high-anxious pupils.

Another example of differential response was the finding that disadvantaged (low socio-economic status) pupils responded differently from advantaged students to the emotional climate in the classroom. They appeared to grow more in the presence of positive affect and less in the presence of negative affect, compared with advantaged pupils. Both findings were counter to our expectations, but perhaps they mean that the disadvantaged pupil is more dependent on the nature of the classroom for his educational progress than the advantaged pupil (Soar & Soar, 1973).

Another characteristic of the child, his degree of motivation toward school work, appeared to make a difference in the nature of organization of the classroom which was associated with most subject-matter gain. The dimension of classroom organization was one in which pupils were assigned seatwork, but when they finished were free to choose other activities -- a measure which apparently reflects a mixture of structure and control on the one hand, and of pupil freedom on the other. Where this pattern of classroom organization was more frequent, pupils who were initially highly motivated showed more achievement gain during the school year than pupils who were initially low in motivation (Soar & Soar, 1973). The reverse also appeared to be true -- low motivated pupils gained more where this style of classroom organization was less frequent (presumably because another style was used in its place which was more functional for them).

The Cognitive Level of Interaction Can be Too High.

The implication that too much of the interaction in the classroom can be at too high a cognitive level comes from three sets of data -- two at the first grade, and one at the fifth. Several dimensions of classroom interaction represented the frequency with which relatively abstract interaction took place between teacher and pupils, following Bloom's Taxonomy of the Cognitive Domain; and a Deweyian approach to teaching. These measures tended to be negatively associated with gain in both pupil achievement and self-concept. In some cases, the negative relationships held for the total pupil group, but in other cases the negative relationship appeared to be true for disadvantaged pupils but not for advantaged pupils.

We suspect this may be a finding with particular implications for pupils with learning difficulties, whether the learning difficulties come from a culturally different preschool background or for other reasons.

Implications for Program Validation.

Findings such as these concern us about the appropriateness of some of the general prescriptions which are made for teacher behavior. Teachers in general are often urged to give pupils more freedom, and are encouraged to assume that one of the hallmarks of good teaching is that the teacher does little directing and controlling of pupil behavior. Another prescription sometimes is that the teacher ought to emphasize higher level thinking activities. Both prescriptions appear to be made without qualifications about how much of these behaviors are functional or with what pupil group they may be functional. What is not stated, but is implied, is that more of these behaviors is better, without limit, and better for all pupils and for all learning objectives.

What particularly concerns us is that the very teachers who are more likely to move in the direction which is advocated are the teachers who may already be giving pupils as much freedom as is functional, (or more), or engaging them in as much higher level cognitive interaction as is functional for most pupils. In a sense "good" teachers are more ready to become "better" teachers, and we suspect the same thing is true about schools and school districts. The possibility seems very real that teacher preparation programs and in-service programs may expend considerable effort toward changing the behavior of some teachers in directions which may result in less pupil growth rather than more.

Some Methodological Issues in Research and Assessment in PBTE

We have commented earlier about the importance of beginning to assure ourselves that the teaching behaviors which we teach are really functional for the growth of pupils. Contradictions in the kinds of teaching which are advocated are easy to find, and the principles which we thought were effective fairly often do not stand empirical tests. While it is clear that the organization of training programs cannot wait for researchers to answer questions of this sort, it seems nonetheless critically important that training programs begin to test, in the context of the programs, the validity of the principles they teach. There is a limited amount of evidence in the research literature which can help with this process, both by providing some concepts which appear to have been replicated, and also by suggesting new concepts for investigation which might not otherwise be considered. It seems important to cycle new knowledge of teaching effects back into preparation programs for revalidation -- a kind of "bootstrap" process.

Another suggestion has to do with the analysis of the data. By far the greatest number of past researches in education have been based on correlations and t-tests. It seems clear that the relationships between classroom interaction and pupil growth are too complex to be represented adequately by such simple analytic procedures. Rather, it must be possible to look at the simultaneous effect of multiple influences. It must be possible, for example, to examine several characteristics of the child as he enters the classroom, including the home and broader community, along with numbers of aspects of his classroom experience, as these affect the changes the pupil makes. It is also necessary to look at non-linear relations, since the evidence is compelling that these are common in this area of research. While these requirements are overwhelming if conceived of as cells in a multi-factor analysis of variance, recent advances in the use of multiple regression (Cohen, 1968; Kelly, Beggs and McNeil, 1969; Walberg, 1971; Kerlinger & Pedhazur, 1973) make it relatively straightforward, using programs that are available at most computing centers. If the skills and the degrees of freedom to use multivariate procedures are available, still greater increases in power and in understanding become possible. The cost of these complex analyses in terms of effort and money is minor, but the gain in knowledge is tremendous.

But the point which seems most critical is that major expenditures are being invested in program development and implementation with little or none invested in program validation. If this continues to be true, as Rosner and Kay commented, the effort is likely to come to nothing. We will not know, finally, whether the teaching behaviors which have been taught make any difference to pupils, and consequently, we will not know whether the program effort has accomplished anything. Too many past innovations in education have fallen by the wayside with no evidence of their success or failure. We hope for better than that for the PBTE movement.

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CBTE ASSESSMENT IN NEW YORK STATE

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I just happened to be on my way from Goshen to Albany, heard you were here and dropped in. When I arrived and was asked to spend an hour with you I was not only flattered, but happy to do so.

The reason for my happiness is that I overheard what I took to be a compliment after I finished the last time I was here. I overheard someone say after my remarks last Spring - "That speech reminded me of what George Bernard Shaw said about Wagnerian music - 'It's not as bad as it sounds.'"

That remark overshadowed a comment representing the other side of the coin, when someone said, "Every speech you've given is better than the next."

The Saturday before last I had the opportunity to spend a couple of hours with the New York State Student Education Association. I guess there were some 90 college students in attendance and when I asked how many were knowingly involved in CBTE programs, I'd say that about ten of them indicated that they were. I was surprised and glad. Surprised because these young folk were seniors and I didn't expect that many seniors to be involved.

Unfortunately, I spent more time talking at them than with them, but the time I spent doing some probing of their impressions of CBTE was well spent. I found that they did know what the elements of the programs were and that they did know the time allocations for program parts. I found that they generally felt the programs were more difficult, but also that they were pleased with their programs.

The one problem that came out, and I admit I dug for it, was the question of assessment. That should not surprise you, and it didn't surprise me, for assessment is one of our biggest problems and one on which time and effort will continue to have to be expended.

There are basically three kinds of assessment and I want to talk about them a little bit this afternoon. First, student assessment - by the way, student is our term for a person in training. A pupil, in our terminology, is a K-12 enrollee. By student assessment, I mean the assessment of the student's capabilities. Second, program assessment - which searches the question of whether the program is doing what it set out to do. The third is another kind of program assessment and relates to the State's assessment of program quality.

In looking at these three I want to use the third as the operational base. The Department's responsibility is to do all that it can to assure the public of the quality of the program. And, I have a sneaky suspicion that you are interested in what "they" will do in registering preparatory programs and issuing certificates. Who was it that said "We have met the enemy and they is us"? I guess maybe that fits in this instance.

The Department will be assessing your program three times. That's the registration procedure-preliminary registration upon submission of a proposal, conditional registration is the second step, and the third step is continuing registration. Now, that third step, continuing registration, will be repeated on a periodic basis of roughly every five years.

The first assessment will be what your program proposal goes through when received in Albany. It will be assessed on completeness and on the content. The completeness assessment relates to whether the items requested in the format have, in fact, been submitted. If items are missing, we will ask for them before taking that proposal any further.

The content assessment will be one which primarily assesses existence. For this is a new world for all of us and our goal during these early years is to establish the conditions from which needed improvements can be identified and subsequently acted on.

I won't take your time to go over all the specifics on which we will judge the proposal, for those specifics are noted on pages 8 and 9 of the program format material* which you have in your folder. I do, however, want to talk about a few of the items in that section of the format.

First, I want to reemphasize the importance of the required analysis and statement of the position for which persons are being prepared by the proposed program. While we are not going to assess the quality, validity, or feasibility of that conceptualization, we shall be seeking its existence as the underlying principle on which the program is built. There should be clear evidence of congruence between the conceptualization, the skills, knowledge, and attitudes, and the assessment of the possession of those desired capabilities.

Peter Aerasian, in writing about evaluation issues, quite clearly presented the rationale for the need of a conceptualization when he wrote:

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*Format for Submission of Teacher Education Program Proposals issued by the Division of Teacher Education and Certification, New York State Education Department.

> The heart of the evaluation process..... is valuing. Date gathering, be it "hard," objective data, or "soft," impressionistic data, is not evaluation. Evaluation takes place when data are compared to some standard or norm and a decision...is made.

In another part of his paper he says it more clearly.

> While some observers argue that the most powerful individuals in a performance-based approach are those who ultimately certify performance or competency, I would urge that the most powerful individuals are those who frame the competencies to be attained. These are the individuals who explicitly define what is a good teacher. The decisions of these individuals color the selection of learning experiences as well as the evaluative techniques and criteria. In the performance-based approach, which proceeds from identification of ends to selection of means to obtain these ends, it is the ends which are paramount. The rationale for a program, its learning experiences, standards, and certification practices rest upon the performances defined as needed by the good teacher.

Thus, to us the establishment of the conceptualization is the creation by the collaborative effort of the value standard. This explains our comment on page 6 which says: "The conceptualization...should be... the key factor in the program degree....."

A second point I'd like to make reference to is the assessment of students. Here again we are at the cutting edge. Sophisticated, valid, and reliable instruments for the variety of assessments necessary are not available at this time. And I'll hasten to add that if we hold off doing anything until these assessments are available, we'll be at the same place in the year 2049 as we are now.

The development of the necessary sophisticated assessment capabilities can only be done in the context of real life situations. And, I believe, they can only be done within the context of the value orientation established by each program.

What, then, is necessary at the time the proposal is reviewed by the State? First of all, is the need for there to be congruence between the expected capabilities and the assessments. Second is the explicitness of the assessments. It is really not enough to say, as one institutional program proposal noted, "A satisfactory performance will be required." We and you both need to know what "satisfactory" is and under what conditions a person should demonstrate "satisfactoriness."

Let me try my hand at a very rough and simple example. Using the competency -

> The student will demonstrate at least three ways of helping retarded children learn and identify the following parts of the body: eyes, ears, nose, mouth, hands, and feet. Each means used shall also aid in developing large muscle coordination.

Now, a statement of assessment might be:

> The student, in a peer-teaching setting shall demonstrate attainment of the competency by using at least two of the following three means: a physically active game, rhythmic song and appropriate body movements, gross drawing skills.

In this simple skill example I've tried to be as explicit as possible and identified the conditions - in this case, the condition is the "peer-teaching session" - and the mastery level, in this case, 3 ways to include 2 out of 3 stated ways.

The more we move away from skills the more difficult it becomes; thus, the more important that the three pertinent agencies are involved. We cannot yet expect perfection, but we can ask that you identify what your criteria are for satisfactory demonstration of the skill, knowledge, and/or attitude. When do you know a student has attained the capability you expect? That's the question which needs to be asked, answered, observed, modified and refined as necessary.

Other aspects of assessment will be reviewed when your proposal is received. We will look at the degree to which your assessments are public - how you attempt to keep students informed of what they need to do.

We will look to see that you have laid plans to determine reliability and validity of your assessments and that you have identified the means by which you will monitor and evaluate your program.

You should be aware of what steps your proposal will go through when it reaches the Department.

Upon receipt of your proposal, it will be acknowledged and then reviewed for completeness. The proposal is then assigned to a staff member of a thorough review. The person who will be assigned to do the review will not be the same staff member that serves as a liaison person for the particular institution of higher education. The review by staff also calls for sharing the proposal and seeking commentary and recommendations from the Division for Handicapped Children. This total review culminates in a memorandum commenting on the programs strengths and weaknesses and it recommends a course of action.

The proposal is then subjected to scrutiny by a Review Panel consisting of the reviewing staff member, the liaison staff member, and the Chief of the Bureau of Teacher Education. It is, then, the review panel that acts on the reviewers proposed course of action which would usually take one of two avenues. Either a recommendation for legal registration action is forwarded to the Associate Commissioner accompanied by a letter of commentary or the proposal is sent back for further investigation by the staff.

When a preliminary registration based on the proposal is issued, it will contain a termination date and, in the case of programs with which you are involved, that date will more than likely be September, 1979.

This means that your program will be expected to have achieved the second stage--conditional registration--by that time.

At a mutually agreeable time during the four year period the program will be visited. The visit shall serve to collect some data and also to ascertain the readiness for the program to be granted conditional registration.

In terms of data gathering we will be seeking data about items such as:

a) the effectiveness of the monitoring system related to student guidance and record management.

b) what changes have been made in the program and what data occasioned the changes to be made.

c) the extent and effectiveness of inter-agency collaboration.

While these items will have a bearing on further legal registration action, the two major areas of review for conditional registration proposals will be:

a) the implementation and effectiveness of procedures to determine reliability and validity of the assessments.

b) the initial implementation of the evaluation and program modification system.

When conditional registration is recommended and granted by the Associate Commissioner another termination date, probably two years from conditional registration will be identified. By that termination date, continuing registration is to have been achieved. Continuing registration will be awarded for five year periods only.

Continuing registration will be granted when evidence is provided that the program monitoring and evaluation system is capable of doing at least, four things:

a) perceiving deficiencies in the competencies of graduates.

b) effecting timely modifications to rectify deficiencies.

c) validating competencies and assessments.

d) increasing the reliability of assessments.

The item I've mentioned relating to what is necessary for conditional and continuing registration are, I agree, very general in nature. I will promise you that by February 1, 1975, and I hope earlier, we will have clearer and more explicit information about the second and third stage registrations for you.

Before I stop I want to mention an item close to my heart that is related to assessment but not exactly in the same sense that I have been talking about.

There are several populations that certification deals with and all of them, I think, must be included in your thinking and planning. They are:

1. The person who begins and completes an entire registered program.
2. The person who transfers into a registered program from a two year institution or another 4 year program.
3. The person who is now a paraprofessional in the schools.
4. The person certified in one area but who wishes to gain certification in teaching the handicapped.

5. The person who is not certified, but has experience in a non-public school.

6. The person who has completed a preparatory program out-of-state or out-of-country but who is not eligible for reciprocity.

7. The person who was certified, but whose certificate has lapsed.

8. The person who has completed a set of courses at various institutions who may not quite meet current requirements or who applies after the deadline.

Up to now preparatory programs have generally dealt with persons in categories one and two and the State, on an individual basis, has dealt with the other six populations.

Our announced plan to go out of the individual evaluation business as of February 1, 1976 for elementary and special education which I believe in very strongly, throws a responsibility on those involved in preparation programs. While we have some time before the full impact hits us in this area, it is necessary for us to look at ways of providing fair and honest treatment for those populations who are not regular members of registered programs.

In finishing, let me commend three publications to you.

1. The Multi-State Consortium publication entitled "Assessment."

2. The AACTE monography #14 entitled "Performance-Based Teacher Education Design Alternatives: The Concept of Unity" which is just out.

3. The September issue of the CBTE newsletter. The lead article, "For Want of An Assessment System CBTE Programs are Lost," is important.

APPLICATION OF SYSTEMATIC OBSERVATION TO TEACHER EDUCATION

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The training of personnel to work with handicapped pupils in the public schools has been the target of some professional attention (Blatt, 1966; Cruickshank, 1967; Deno, 1973; Lilly, 1971; Shores, Cegelka & Nelson, 1973), but probably has not received the scrutiny warranted by the topic. Training programs in special education have most recently been influenced by the general trend toward performance-based teacher education (PBTE). The evolution of new training programs in special education is characterized by an emphasis on the specification of training objectives in behavioral terms and the establishment of criteria for the assessment of their attainment (McKenzie, Egner, Knight, Perelman, Schneider, & Garvin, 1970; Meyen & Altman, 1973; Shuster, 1973; Schwartz, 1971; Schwartz, Oseroff, Drucker & Schwartz, 1972; Shores, Cegelka & Nelson, 1973). Alternatives to traditional training procedures are taking the form of self-contained modules designed to furnish trainees with a defined set of objectives for attaining specific knowledge, attitudes and/or skills (Thiagarajan, Semmel & Semmel, 1974). While such modules appear to be particularly promising approaches to developing specific, noninteractive teaching competencies (e.g., planning for instruction, grouping, assessment of pupil ability levels, etc.), relatively few programs have developed the means for assessing and developing interactive skills in practicum environments (i.e. behavior management techniques, questioning skills, motivational techniques, etc.).

Observation instruments have shown considerable promise as basic teacher training vehicles around which a comprehensive program for the development of interactive teaching skills can be realized (Semmel & Thiagarajan, 1973). Essentially, observation systems are used to record objective information on subsequent interactions with pupils. Finally, methods of analysis frequently necessitate reduction of observation data. Consequently, many relevant dimensions of the observed pupil-teacher interactions (e.g., sequential patterns) are obscurred--frequently resulting in an oversimplified description of the behavioral interchanges between trainee and pupils. Until these limitations can be overcome in a cost-effective manner, the practical application of systematic observation methods to teacher training in special education will remain unlikely--and the development of PBTE programs with emphasis on interactive skill development in practicum settings appears more as a promise than a feasible reality in the immediate future.

The Computer-Assisted Teacher Training System (CATTS)

The application of computer technology offers a promising solution to a number of existing limitations in the use of systematic observation techniques in teacher education programs. Special educators are currently exploiting opportunities afforded through recent advances in technology. Application of computers in special education is broad in scope, ranging from direct computer-assisted instruction (CAI) of handicapped pupils (Stolurow, 1960), to offering ongoing branched CAI special education courses at the University level (Cartwright, Cartwright, & Robine, 1972), to providing state-wide computer managed curriculum objectives and materials retrieval systems for practitioners in the field (Noffsinger & Daiker, 1972). Undoubtedly, as such efforts progress and cost factors are controlled, we will be faced with the reality of a technology revolution in special education within the coming decade.

The question which arises then is, "Can we utilize computer technology for preparing teachers to work effectively with handicapped pupils in special and/or regular class settings?" To my knowledge, few attempts have been made to explore and evaluate the potential contributions of computers in developing observation procedures for improving trainee interaction skills.

Much of the writer's research and development activity is being directed toward realizing a cost-effective Computer-Assisted Teacher Training System (CATTS) (Semmel, 1968; Semmel, Olson & Weiske, 1972; Semmel, 1972). CATTS is conceptualized as a closed-loop cybernetic system capable of providing continuous, instantaneous, and/or delayed feedback of relevant teacher-pupil interaction data to a trainee in the classroom in order to modify behavior through regulatory teaching moves. These moves are determined in accordance with predetermined training objectives. The system (Figure 2) is designed to produce a cost-effective means of collecting data from systematic observations and real-time analysis, storage, and feedback of information relevant to pupil-teacher interactions in special education contexts. Feedback can be provided through instantaneous visual display in the classroom or through hard-copy computer printout immediately following an observed teaching performance. The system permits rapid analysis and accumulation of stored data within and across teaching situations. CATTS also provides for computer managed techniques for building and adapting observation systems and an efficient means for training reliable observer-coders. The system is designed for application in both preservice and inservice teacher training contexts. It can be used within a teacher education laboratory on a college or university campus, or directly in public school classrooms in the community. Computers access is available through direct on-line interface, Touch-Tone telephone interface from remote locations, or through-off-line magnetic tape devices called DATAMYTES. Hence, it can readily be seen that CATTS is a promising approach to eliminating a major deterrent to the use of systematic observation procedures in special education teacher preparation programs.

A Preservice Teacher Training Model

CATTS is used in conjunction with an evolving training model in which teacher education is conceptualized as a problem in adult learning. The learner is required to generate teaching behaviors appropriate to the educational context in which he practices. Teaching is viewed as a performance skill which is best learned by practice in training settings, with accurate and rapid feedback of performance being essential to efficient acquisition of goal behaviors. Efficient acquisition of teaching skills is dependent upon (a) the specification of target behaviors, (b) reliable and valid feedback of performance information during or immediately following acquisition trials, and (c) access to data from previous training trials.

The model currently guiding our training research efforts focusses on the trainees acquisition of "appropriate" interactive skills through a process of discrminating, generating, and evaluating interactive behaviors, patterns, and environments. The progress from simulated conditions, to practice in a controlled classroom laboratory, to the naturalistic context of community schools. The discrimination process is defined by the trainees' acquisition of the ability to build, adapt, and/or adopt an observation system that operationally defines the domain(s) of interest, and by the trainees' ability to reliably apply the system in observation-coding training sessions. Once proficiency in discriminating the categories of the observation system is demonstrated, trainees are provided with reliable feedback of their teaching using the "lexicon" and "grammar" of the system selected. Behavioral objectives are derived from an analysis of such baseline feedback and the trainee moves into the generation phase of training. Generation refers to the performance of specific behaviors, patterns and/or environments generated by the trainee while teaching in an appropriate training context. During the generation phase, the acquisition of skills is reinforced through the use of feedback of information to the trainee during and/or immediately following any training trial. The parameters of feedback vary as a function of the objectives of any training trial or sequence. Following feedback, trainees are encouraged to evaluate their performance on the basis of objectives established for the pupils being taught. Hence, the evaluation process includes (a) assessment of the degree to which teaching skill objectives are being achieved and (b) the degree to which the modification in teaching behavior is correlated with desirable pupil behaviors. Trainees proceed developmentally through the training paradigm by first focusing on the mutually exclusive categories which define the subordinate structure of the observation system--then moving to more complex interactive sequences which define teaching patterns (e.g., *probing*: teaching question, followed by pupil response, followed by teacher elaborated question, followed by pupil elaborated response). Finally, students attempt to discriminate, generate, and evaluate what we refer to as pedagogical environments. Such environments are conceptualized through the analysis of patterns across a given teaching episode. Pedagogical environments are exemplified by the various models for teaching described recently by Joyce & Weil (1972).

The training model identifies three training contexts in which acquisition of skills can occur: simulated, controlled (laboratory), and *in situ*. There is some evidence that training in the natural environment may be inefficient and/or unfeasible for particular interactive training objectives. Trainers are frequently unable to control the occurrence of events necessary for discrimination or generation skill development. Further, trainers are frequently faced with administrative and ethical issues in proposing to develop all trainee interactive skills within the context of the public school.

The interacting skill components of the evolving teacher training model operate within those behavioral domains deemed most relevant to working with handicapped pupils. Hence, the domains within which conceptual hierarchies are most frequently considered are: cognitive/academic, affective/management, social/participation, and linguistic/communication. Other considerations in operationalizing the model include: the nature of contextual and other input variables and noninteractive teaching skills (e.g., assessment, planning, grouping, etc.).

CATTS is the principal vehicle through which we are attempting to demonstrate the various elements of the teacher training model in preservice special education programs. The system provides us with automated techniques for rapid discrimination training, rapid collection and analysis of interactive behaviors and patterns, rapid feedback of information to trainees, and rapid storage and retrieval of all training trial data for all trainees in the program. The system has the capability of processing data generated from any behavioral domain and can simultaneously accommodate up to 12 different observation systems. The data can be subdivided into N mutually exclusive categories. The system further permits data entry from any or all of the training contexts described above--including direct on-line entry and feedback from and to remove practicum settings in the community.

Preservice Research and Development Activities with CATTS

Initial work on the Computer-Assisted Teacher Training Systems (CATTS) was reported by the writer (Semmel, 1968) and his students, Kreider (1969), Weaver (1969), Schmitt (1969), and VanEvery (1971). In general, these studies support the efficacy of immediate concurrent CATTS feedback when specific behavioral goals are central to training.

Schmitt (1969), for example, used the CATTS system and a modified version of the FIA system to train preservice teachers to increase their use of broad questions and reduce the frequency of binary questions in teaching the EMR. The results indicated that CATTS trainees spent significantly more time asking broad questions than did control group trainees. The study also indicated a positive relationship between teachers' use of broad questions and the production of multiple-word responses by EMR pupils.

VanEvery (1971) used CATTS technology to study training of speech therapists in a clinical setting. A remote telephone line was used to communicate between the speech clinic and the CATTS computer facility. Observations of therapists in training were coded in the clinic and transmitted by telephone line to the computer, which fed back information in real-time. The feedback was presented on an event recorder which traced a pattern representing training objectives on a moving belt of paper. Trainees who received the immediate CATTS feedback showed a significant increase in the use of social reinforcement patterns when compared to a control group. VanEvery's work demonstrated the feasibility of eventually moving CATTS into remote public school classrooms for inservice training opportunities.

Merrill Sitko and I have recently completed a study within the context of our special education methods practicum for undergraduate trainees (Semmel & Sitko, in preparation). Our purpose was to demonstrate the effectiveness of CATTS immediate visual and delayed (printout) feedback in increasing various cognitive and management behaviors of teacher trainees in a classroom setting. Trainees received either instantaneous-continuous feedback through a TV monitor while teaching and a hard-copy summary printout immediately after a teaching session, or received only the hard-copy summary printout. Skill objectives were self-selected by trainees. A variation of the replicated single-organism multiple baseline design was used in the study.

The results revealed that all trainees in both treatment conditions significantly increased their baseline criterion rate of performance as a function of CATTS feedback. In fact, the relative rate of responding to the selected criterion measure between feedback treatment and baseline phases was approximately 4:1. Trainees who received both the CATTS in-class video and hard-copy delayed feedback increased their criterion rate of responding to a significantly greater degree than did trainees in the delayed printout-only condition. The relative rate of responding between the two groups on the individually chosen criterion measure was approximately two to one (2:1).

Observer Training Through DITRMA

The discrimination skills of trainers are developed through the training of reliable observers. A newly developed, computer-aided training device called DITRMA aids in the development of these observation skills. DITRMA is based upon a simple consensus coding principle wherby individual trainees' responses from two or more coding terminals are simultaneously compared by the computer, and the result of such comparison is instantaneously fed back to the trainees. Through expanded application of this simple configuration, the DITRMA system can be used to teach discrimination of relevant teacher-pupil behaviors, and to maintain that level of reliability. DITRMA is a second generation consensus coding system originally developed by Semmel, Guess and Flanders at the University of Michigan.

During coder training sessions, observers code videotaped examples of the observation system categories on button boxes having a configuration identical to Touch-Tone telephones. These button boxes are linked to our PDP-12 computer. The computer acts as an impartial judge as trainees code with a small group of up to five peers. If all coders agree with each other on the coding of an event, the group receives a visual and auditory reinforcer from a second video monitor and loud speaker (e.g., "right-on", "Great," "Good," etc.) the videotape continues, and the computer records the agreement in its memory bank. However, should one or more coders disagree with the others, the computer automatically stops the videotape, and a display of all identified codes appear on the second video monitor for all trainees to study. Trainees subsequently discuss their differences--the computer "refuses" to continue the first videotape monitor until the group reaches a consensus of agreement on what is the correct discrimination and code.

DITRMA was first used in connection with the previously described Semmel and Sitko (in preparation) project. Evaluation of the sytem was very promising. Coder training time was reduced by approximately 50% when compared to our previous procedures using paper and pencil techniques. Of perhaps greater importance is the serendipitous realization that DITRMA is a potentially powerful device for training many teaching skills through what, in effect, is an automatic, self-instructional group format. The system acts as an impartial and automatic discussion leader for small groups of trainees who are viewing videotape protocols. We are currently developing a number of prototype instructional training programs which use DITRMA for the training of noninteractive teaching skills, attitudes, and knowledges.

The new DITRMA system is also capable of assisting in the development of category observation systems. We have found DITRMA invaluable for rapidly identifying categories which are subject to relatively high rates of observer disagreement--an indication that the categories are imprecisely defined.

Application of CATTS to Inservice Teacher Training

The application of CATTS to inservice training of teachers has particular promise for contributing to more effective teaching of handicapped pupils. Existing inservice training paradigms most frequently require the teacher to "come to the training". Courses are offered at local colleges and universities, or workshops are offered by visiting consultants. These usually require meeting at some central location away from the classroom and school. Inservice activities offered through school districts usually require after-school attendance by teachers who are unmotivated and exhausted after a hard day's work with pupils. More and more, we are finding the issue of inservice training requirements of school systems the subject of collective bargaining in the negotiations of teacher's contracts. It is well known that inservice training after the working day or prior to or after the school year is becoming more and more difficult and costly. Further, attempts to improve teaching skills through direct supervisory classroom visits are frequently fraught with difficulties. Supervisors rarely use systematic observation approaches, and the results fed back to teachers are often haphazard and unreliable. Supervisory feedback is often viewed by the teacher as a subjective evaluation with potentially negative consequences; this in turn may lead to increased defensive behaviors with supervisors and/or socially acceptable reactive effects to being observed.

CATTS provides a possible solution to many of the above problems since it is a system of inservice training delivered to the teacher directly in her own classroom, during the school day, as she works with her own pupils within the context of a curriculum of her choosing. The system has the capability of delivering nonevaluative, reliable feedback to the teacher about her interactions with pupils. Feedback can be provided with a minimum of delay, thus maximizing the relevance of the information to the modification of behaviors required for reaching specified teaching objectives.

Different applications of CATTS have been field tested and demonstrated in a number of community inservice training sites during the past school year. Space does not permit a detailed description of each project, but I shall attempt to offer a number of brief examples which illustrate some of our more recent applications of CATTS in inservice training contexts.

The Hammond school project. One persisting problem in the training of teachers is sensitizing them to the needs of sociometric isolates in their classrooms and developing their skills in minimizing the social rejection of such children. The Hammond Project (Ballard & Semmel, in preparation) is designed to use CATTS in training teachers to be more effective in meeting the needs of isolate children in their classrooms. An observation system was constructed by modifying the Indiana Pupil Participation Schedule (Semmel & Meyers, 1973). The system focuses on pupil and teacher behaviors related to social participation of pupils in the classroom. Observers used a portable Touch-Tone (TT) telephone, which was interfaced from the classroom through direct telephone line to the computer facility at CITH (approximately 250 miles away). Observers entered eight classrooms each day, plugged the TT telephone into a common extension phone receptacle installed in each of the respective classrooms, dialed in to the computer, and proceeded to code the interactive behaviors of the teacher and target child during reading and mathematics lessons. The coding signals were instantaneously received, summarized, analyzed, and printed out at the Center. Printouts were then transmitted back to the school through the use of Xerox Telecopier and telephone. Feedback was in the hands of each teacher within a ten-minute period.

Preliminary analysis of the results of this input-process-product study are very promising. Significant changes occurred in the sociometric status of the target children from the pre- to the posttest period. We are currently in the process of relating teacher and pupil process data to the outcome variable. If our subsequent analysis of the data meets our expectations, we feel that a feasible and effective paradigm for the delivery of inservice teacher training, while the teacher is working with pupils in her own classroom, will have been demonstrated.

Inservice training paradigms using delayed CATTS feedback. Two field research and demonstration projects have been conducted which used the capabilities of CATTS in conjunction with specified training needs of school personnel. The Cuyahoga County Project (Pisarchick, Sitko, & Semmel, in preparation) was aimed at improving supervisory effectiveness through the use of an observation system and objective feedback of teaching performance to teachers of EMR pupils. The target population included 20 intermediate-level teachers and three special education supervisors. Observation data was collected using DATAMYTES, which are small portable units with Touch-Tone telephone button pads. Observers enter observation codes through the buttons, which transmit a signal to a portable cassette magnetic tape recorder carrier by the oberver-supervisor. The cassettes are sent to CITH, where they are replayed through a converter coupler which transforms the audio signals into a serially transmitted digital signal--which is then processed into computer storage. The data are then analyzed and summary printouts are returned to the supervisors by mail.

The BOCES, New York Project (Brown & Semmel, in preparation) was an inservice training program which assisted teams of special educators in studying the interactive processes between staff and selected problem pupils. The school program is conducted in a self-contained special education facility for retarded and emotionally disturbed children who are not otherwise served in the pupil schools. The school is organized on an open classroom plan. Two hundred-twenty students (K-12), 42 teachers, psychologists, and social workers, and 8 administrators were involved in the project. DATAMYTES were used for the collection of observation data by the school personnel, who developed an observation system to meet their specific interests. While CITH staff assisted in the design of the observation system and training of coders, the specification of system categories and definitions and the data collection process were the responsibility of the entire school staff.

Specification of the parameters of feedback was a collective decision of the BOCES staff. Cassette tapes were forwarded to CITH for processing and summary printouts, as prescribed by the staff, then were returned to the school in New York.

Feedback ranged from specific behavior rates on categories of both teacher and target pupil behaviors, to detailed information on the child's use of different instructional areas within the open classroom environment, to three-stage sequential chains of interactive behaviors with peers and teachers. Teams met periodically to study the feedback information and establish common team goals based upon the analysis of the printouts. One particularly interesting outcome of this project was the staff's consensus that the delay of feedback was prohibiting the maximum use of the information obtained. The administration has subsequently applied for and received federal funds to install an immediate feedback CATTS system within their school district, using an existing computer facility. In the past, the school district's computer had been used primarily for clerical and administrative purposes.

New Directions in Teacher Education Research

Like so many groups interested in the teaching process, we have followed the primrose path of conceptualizing teaching the handicapped as the acquisition of a repertoire of relevant teacher competencies. Hence, most of our earlier efforts in teacher training using the CATTS system have involved training teachers to acquire specific teaching skills and feeding back the results of their efforts to use these behaviors with handicapped children. Such a model has led us to training procedures which were buttressed by a number of unverbalized assumptions of questionable validity. For example, teachers were typically instructed to increase their high level questioning behavior when working with the EMR child. It was reasoned that the use of binary questions leads to limited pupil verbal responses. Hence, for the EMR who tends to display restricted verbal ability, teachers have a natural proclivity to reduce cognitive demands--thus perpetuating the limited verbal and cognitive abilities of such children--and assuring a self-fulfilling prophecy. There are a number of teaching skills which we rationalized as appropriate for use with handicapped pupils. However, such skills invariably have been assessed, using increased rate or duration as a criterion of successes, and have been fostered without due concern for appropriate antecedent interactive patterns. Hence, we have too frequently told our students to get in there and increase their use of high level questions, or use more probing techniques, or use more positive reinforcement, and the like. We have behaved as though we knew what good teaching is--as though there is a repertoire of teaching skills which is universally accepted and invariably effective with handicapped pupils. It is most likely that fundamental to teaching is, as Hunt (1971) has noted, the matching of pedagogical alternatives to specific antecedent pupil behaviors--and that such matching varies from situation to situation, from child to child, and is dependent upon a complex of interacting teacher variables. Teaching is more than acquiring a repertoire of teaching techniques--it is more than the maximizing of one class of teaching behaviors and the minimizing of another with a specific class of children. Teaching is more than simply matching appropriate teaching behaviors to immediate pupil behavioral antecedents. The simple two-stage Markovian chain is probably a poor model when applied to the most appropriate pupil-teacher interactions (Collet & Semmel, 1971).

I do not mean to negate the importance of assisting potential teachers in acquiring a repertoire of teaching skills. This is obviously necessary--but not sufficient. Teachers must also learn to discriminate the state of a classroom or pupil at a given point in time during an educational interchange--and to select the teaching behaviors or patterns which are the most likely to be useful, given the teacher's assessment of the most probable current states of pupils or classes. This is for me the essence of teaching; it has been referred to by Shavelson (1974) as the basic teaching competency--decision-making. I feel that the skill is analogous in its application in the classroom to the moment-by-moment induction of attributes by treatment interactions. It is somewhat akin to teacher flexibility--a factor noted by Rosenshine (1971) and others to be one of the few teacher competencies correlated with pupil academic growth.

We must develop paradigms for training teachers to flex--to become more effective in matching their techniques to the states of pupils and classrooms on a moment-by-moment basis. To my knowledge, there is currently no systematic method for training teachers in interactive decision-making skills. We are however, encouraged by attempts to build formal models which employ Baysian constructs and heuristic strategies to conceptualize the necessary steps for teacher decison-making in interactive settings (Shavelson, 1974).

A related area of concern is the assumption that classical closed-look feedback models are the most efficient cybernetic paradigms for the skill training of teachers. Should teachers be reactors or predictors? I have recently become interested in throughput predictive models which may have particular promise in one work (Maccia, 1973)[1]. For years, commercial bakeries used closed-loop models to monitor the progress of baking products. Each piece of bread was tested as it left the oven on the conveyer belt. If a burned loaf was detected, a message was instantaneously relayed through a thermostat, and oven temperature was adjusted accordingly. The problem was that commercial bakers found that they lost too many loaves of bread using this configuration. Now bread is monitored from the moment it enters the oven. Readings are relayed to a computer which calculates the probable outcome and adjusts oven temperature prior to that outcome. The result is a zero loss of loaves of bread. Given our current ability to analyze complex chains of interactive behaviors in classrooms using multiple observation systems simultaneously, we may soon be in a position to make relatively accurate predictions of the consequences of maintaining a given complex pattern of pupil-teacher interactions. Such information could be transmitted to teachers in training, who would be expected to alter the process to avoid an undesirable outcome--or to maintain a process to increase the probability of a desired event. We are currently pursuing the feasibility of using such a model with our CATTS system. Normative data from Project PRIME have promise for providing the basic data from which algorithms might be developed for the cognitive and affective domains when working with midly handicapped pupils. Where we currently present teachers with summaries of what has already transpired and expect them to alter their behavior as a function of receiving such feedback, a throughput model furnishes the teacher with a prediction of what is most likely to occur if she persists in a process. Such information may prove more effective in training teachers to assess the probable effects of their behaviors--thus inducing, through training, a predicting or anticipating skill.

Concluding Comments

In this presentation I have attempted to outline some examples of the application of systematic observation in research and training in special education. A major point of emphasis was that there is frequently great disparity between verbal descriptions of teaching and that which is directly observed. This is most relevant when we wish to relate input variables and pedagogical interventions to the growth of handicapped pupils. It is unlikely that meaningful relationships between teaching and pupil growth can even be established if we persist in defining special education programs by alluding to the training credentials of personnel or implied treatments subsumed under the rubric of a vaguely defined administrative arrangement.

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[1] Personal communication.

The use of svstematic observation in research on teaching in special education has promise for sharpening our understandings of those process variables which are most relevant to pupil growth.

Direct observation and feedback, used in conjunction with computer technology, may permit the development of effective and efficient inservice and preservice performance-based teacher training programs. There is much research and development work to be done before a cost-effective CATTS system can be made generally available. However, I believe that we have come a long way toward demonstrating the feasibility of developing such a training system for special educators, although we lack a program. We do not yet know which testing behaviors are casually related to the growth of handicapped pupils. It is doubtful that we as special educators could get any closer than regular educators to achieving a consensus of who is and who is not a good teacher. Hence, while we must continue to train teachers, in the absence of an empirical literature to guide a PBTE program development, it appears necessary to at least establish a set of publicly and clearly defined objectives representing the skills we hypothesize that teachers need. If we establish such objectives and are willing to submit our training efforts to objective evaluation, than we can at least establish the effectiveness of our training techniques. Upon evidence that trainees attain skill objectives and transfer them to their work with handicapped pupils, we may progress more rapidly toward validating the effects of teaching through the growth of handicapped pupils. Teacher training in special education can progress only when the two issues of training effectiveness and validation of teaching effects are systematically pursued. Effective training programs are those that demonstrate the acquisition and transfer of teaching skills in accordance with predetermined training objectives. Validating teaching skills involves the demonstration that such skills are related to pupil growth criteria. Systematic observation techniques are central to meeting both of these goals in special education research.

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Models for Research and Development in Performance Based Education*

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Educational Testing Service

I'd like to correct that record slightly. I'm not responsible for the Accountability System in New York but for the design of the plan that they have adopted.

Actually, that plan (this is kind of a diversion from what I'm going to say) is an interesting example of cooperation among a very diverse group of people. The Committee on Accountability was composed of representatives of the Union, Parents Associations and various groups. They had to agree on a plan, and they did, and our part was the technical contribution. There's an enormous amount of goodwill in the city at that level to make that system work. In many respects it's a good example of the kind of cooperation you can get among people if you work fairly hard at it. Im' not a believer that you just get people together and good things happen. My experience is you get people together and terrible things happen! There was one instance where a group of people essentially anatagonistic to each other worked out their differences very well. And part of the problem in this whole competency based movement is the fact that we're always interacting with people that we're not used to interacting with, and it's beginning to get to me to be honest with you. I'm getting kind of ticky-tacky having to interact with school superintendents, teachers, union representatives, college professors, etc. I'm losing my sense of identity - I think, "who am I?" - because I have to try to mediate differences of points of view on what constitutes competence among people who differ in their points of view.

Let me tell you a little bit about the National Commission and what it's up to. Right now we are not doing any work in special education but that's not by choice, that's because the opportunity hasn't presented itself, and part of what we do does depend upon either generating an opportunity or somebody knocking on our door saying we'd like to work with you. The Commission was set up to solve the problem that of course you've already solved. Since you know what constitutes competence, most of what I'm going to say is irrelevant.

About three or four years ago a foundation took an interest in something we proposed to them. I'm a little sensitive about mentioning the name of the foundation these days, since a member of the family is up for a prominent position in the government. But it was the Rockefeller Brothers Fund and they gave us money really to do a feasibility study. These days everybody seems to be getting into competency based education and we said maybe there's some way to get people to work together - that pie in the sky approach to human nature. But people were doing things and if you could get some type of basic organization to do much of the research and development work you might actually increase the efficiency of what was being done. It was that simple an idea. So we talked to many people who at that time were identified with the competency based movement, held a number of relatively small meetings, talked to everybody we could talk to, said what does this whole business need. And it was obvious that there were plenty of people who were promoting the ideas, there were a number of people trying to build programs, there were obviously states seriously considering it and working up plans to implement some form of competency based certification. The big thing that kept coming up again and again was "What shall be the criteria by which you will certify people in terms of competence?"

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*This manuscript was edited by the CBTEP staff from a tape recording made at the time of presentation. Blackboard illustrations have not been included.

I happened to know at the time what the position paper of the UFT committee on this was going to be: that they would essentially support research and development on competence, but that they weren't about to accept certifying or re-certifying people in terms of competence. That attitude obviously was a pervasive attitude. You talked to people in schools of education. You'd say to them: "How are you going about defining your program?" "Well we'd get the faculty together and we'd talk about what constitutes competence and we'd agree." And having been a faculty member a good number of years I had an intuitive understanding of what probably came out of those agreements. That is, if you had a faculty that couldn't agree nothing came out of it. If you had a faculty that could agree something came out of it, and in every faculty there's always sub-groups, as we say euphemistically, who couldn't possibly agree no matter what happened. There were places like Houston which obviously had got a program going because the Dean started it. They started with a Dean who was committed to the notion of competency based, who went out and hired faculty and did other things that deans do to bring most of the staff along. The University of Toledo had something going, Weber State had something going, but the number of instances were small and all were particularly vulnerable to the charge of substantiating what it is they were doing.

That's the real difficulty with competency based of course. As soon as you say what constitutes a competence you are bound to arouse controversy. So what we proposed to the Rockefeller Brothers Fund was that we create a national commission whose sole purpose was to generate a national research and development effort to study teaching competence or teaching effectiveness, and they agreed to provide what constitutes the administrative support for creating that commission.

The Commission is made up of a diversity of people. By design roughly half of them are professional researchers, people in universities or research centers of one kind or another. The other half is made up of two kinds of people: people who represent education professionally, like deans, union leaders, and school superintendents, state superintendents and so on. The other half are made up of people who represent the public, such as legislators, governors, etc. I'll mention some of the names in the latter category: Governor Byrne of New Jersey is on the Commission, Senator Pell, a senator from Rhode Island who happens to be the senior Democrat on the Senate Education Committee, Congressman Quie, who most educators know about because of his great interest in education. I think he's the ranking Republican member on the House Education Committee which is more Democrat than Republican obviously. But he's the senior Republican on there, I believe. And Congressman Thompson, who happens to be my Congressman. That's not why he was chosen however, but he is a New Jersey Congressman and a senior Democrat on the House Education Committee.

So the people who represent the public are in one sense people who are close to policy decisions about education and they do come from states and areas where there has been consistent interest in competency based education. Or they themselves have been interested in problems associated with competency based education. Albert Shanker is a member of the Commission; the NEA is represented by David Darling, who's, I forget off the top of my head what his official position is, but he used to be the editor of the Journal of Teacher Education and so on, but he is the official NEA representative. The superintendent of the Minneapolis public schools is a member, John Davis. John Porter, the superintendent of instruction in the state of Michigan is a member, and so on down the line. Several deans, the Dean of the University of Texas, the Dean of what used to be called San Francisco State, now California State University of San Francisco, A. Hilliard. The Vice-President of Ford International who used to be Dean at Portland State is there. Then the researchers are a mixture of people who have done research on teaching such as Nat Gage who most people remember as the editor of the first handbook on teaching. And people who have never been in this field, but who are very competent investigators. Anne Anastasi from Fordham, past President of APA, and anybody who's ever studied individual differences has propbably read her book, "Psychological Testing". She represents somebody who has great research skill and competence and knowledge and experience but has never been particularly interested in this field. And there's a reason for bringing that kind of person in, and that is to broaden the point of view about research methodology and research strategy, by capitalizing on the experience of people who have worked in other fields and other problems.

Well, its an interesting group. We're meeting next week, really the first time that the full group has ever been together. We've had two meetings before that were kind of quickie-like meetings, that is we said come if you can: if you don't make the first one, come to the second one. At one point we originally thought of separating what we referred to as the socio-political educational types from the research types. And the only instance in which the people of the fund ever gave what I would regard as something resembling a directive was on that particular point. They said, "Look, one of the things we liked about your proposal, was the fact that you mixed the researchers and the people who have to deal with the practical problems and the public policy problems. Please keep them together." So we have, and it has led to very interesting kinds of discussions. If you're familiar with John Porter, if you're knowledgeable or even heard about what John Porter's trying to do in Michigan you have a state superintendent who is very anxious to get along with improving the quality of education. And he said so, very reasonably and forthrightly. And that kind of influence in a group of people who usually tend to be overcautious researchers, is a very healthy influence. And I don't know what the upshot of this is going to be but obviously I expect to have some successful outcome. But it's an interesting group and represents the kind of mix that ought to be involved in all of these different groups.

The Commission is broken down into two committees: One a public policy or public liason committee that has Pell and people like that on it and then the research committee. But even in composing those two committees we've put researchers on what, in effect, is a public policy committee and we've put people interested in public policy issues on the research committee. There's no question about what our goal is, first to do good research, but to do it in such a way that it makes a difference in how our institutions make decisions about policy. And that's what we're up to. Naturally since what we do is spend most of our time planning a research program, by and large we've been left alone by everybody else because they say, "Oh, you go ahead and do that thing you know, we're out doing the real thing." And, so far we haven't generated much flak. But undoubtedly we will take some positions on matters like accountability and what constitutes competence. One of the first meetings, was a long discussion on what you mean by teaching performance: What's in, what's not in. Harry Broudy, who has not been regarded as a friend of the competency based movement by some people, is a member of the commission. He brought the point up, and we thoroughly debated it.

Now the thing that makes the Commission's research program distinctive is that we have said competence must be defined in terms of effects on students. Most people have been avoiding that issue, usually in two ways. They say, "That's too hard to measure. To establish the links between the two is difficult and threatening, therefore avoid it." Or, "There are so many factors affecting student performance that you'll never be able to partial out the influence of teachers." That latter point I regard as the more critical one because essentially it's a council of despair. If that were literally true there's no way you can make any claims to status or necessity in the teaching profession. If you can't demonstrate that you as a teacher have some kind of effect, so what? Given the general antagonism of the public to increasing teachers' salaries, that kind of view just feeds into the hostility to the professions' attempts to increase the rewards for being a teacher and increase status. The other thing, we are definitely living in an era when a significant number of people, a better way to say it is that a number of significant people, have come to the conclusion that the effects of schooling are relatively minor and the effects of teachers within schooling systems are still more minor. If you'll permit that butchering of the comparative. And I hear this fairly regularly. Can you really demonstrate whether teachers make a difference? After all, we know what Jencks has reviewed and so on and so on. And there's a sort of general apathy, indifference, and disbelief about whether anything a teacher does or a school does makes any difference whatsoever.

Now, you might very well say, "Why do you take a different point of view?" Well the reasons are very simple. I don't think any of the research that is used to support the position that I just described has in fact been very good research. The Coleman study for example has only one measure, well they had two kinds of measures of teachers, one of teacher aptitude, which was a short verbal aptitude test, which I don't usually refer to since ETS built it, but it was a vocabularly list. That's basically what it was. A standardized verbal aptitude measure with one of the components in it. Now I'm sure you're aware of the fact that scores on that happen to correlate rather significantly with pupil performance scores. And economists who are interested in educational planning have latched onto that particular "conclusion". Because it gives a way of selecting teachers that would make the system much more efficient. The only other thing that the Coleman study produced on teachers was a list of characteristics, background characteristics and so on. There were no observations of teacher performance. Everybody knows what the difficulty in the Coleman study is, significant as it was. But it's that kind of research methodology out of which sweeping and unsubstantiated conclusions about the effects of teaching performance come. I never thought I'd get to that verb at the end. So our position is that we think we can do a better job of doing this research. And what I'm going to do is talk a little bit about the overall research design, but this, remember, is in the context of relating teacher performance to student effects. What I'd like to do is lay out two basic methodologies that we use as strategies and what we expect to find when we do that.

Anyone familiar with the design for accountability will recognize that some of the ideas that we developed there have subsequently been built into this research strategy. We conduct two kinds of activities simultaneously. One is a set of experiments and the other is a field study type of operation and I'm going to describe the field study type of operation first. The minimum requirement to conduct the type of field study that we're talking about, is to have two measures of pupil performance at two points in time. Now I'm not saying anything about what the pupil measures should be, that is open, in fact the more open it is the better. We have just finished a study in California where the two criterion variables were in the two areas of reading and mathematics. So we measure reading performance in the beginning of the year and reading performance at the end of the year. Now this is a side point that I will refer to very quickly. You say, "Why didn't you measure more often?" That was really a function of what we were permitted to do in those circumstances. But the absolute minimum is that you get two performances: one at the beginning of a point in time and the other at the end. Now what you're trying to do in this field study is find teachers who are more effective. And what is meant by more effective here is the statistical definition of effective. For every child you have two sets of scores and what you do is regress Spring scores on Fall scores. And when you do that you end up e.g., here we'll talk about a teacher's class now. Here's a class and this score represents where they were in the Fall and this score represents where they were in the Spring. So, I'll make up some numbers. Say that their mean performance on the measure of reading comprehension was a score of ten. And their mean performance in the Spring was a score of twenty. Now for every teacher in the study you would have that kind of information. You do a regression analysis and that means you've got points all over the place, each of those points represents coordinates of those two mean scores. Here's somebody e.g., who started out with a relatively high initial score but whose subsequent score doesn't look very high. And you say how could that happen. Did it happen is what you want to find out first of all. Now when you do this regression analysis you end up by being able to draw a line through all those points and in essence what that line means, for those of you who had regression analysis in your training, essentially that line is a post-prediction device. This point on the line represents where you'd expect classes which began here to end up, given all the data that you've got. That's in essence why you draw this line. It's a line of best fit around all these data. Now, what's interesting about all this are the people whose performances depart markedly from that line. For example, if somebody falls up here, what in effect seems to be going on? What seems to be going on is that somebody who started at this level and you would predict would end up there in fact has ended up way up there. Now what you're looking for are those people, that sub-set of people, whose scores, whose class of scores depart markedly from that regression line. That's the first step in the strategy. This is a hunt and search procedure. I am trying to find somebody who is "worth looking at".

Now in the intervening period between the Fall and the Spring, what you do is observe teachers by actual classroom observation, live observation, the kind of thing Bob Soar was talking about yesterday. You go into classrooms and you observe. And now what you do is take these observation data and try to find those factors or facets or characteristics of these teachers that distinguish them from the others. These data become a set of hypotheses about effective teaching performance. O.K. So let me recapitulate very briefly. You have started with a criterion of pupil effectiveness in general. It's a gain criterion. What students have gained the most, what groups have gained the most, and you then identify teachers where that gain is more that you would expect in the ordinary course of events. I'm not talking about absolute scores now, I'm talking about the differences from this line. I'm not talking about grade equivalents or any of that sort of thing. Having identified these teachers you then look at any information you have on those teachers that would enable you to say they do this and the others don't do that.

Now, you know, it could turn out, and when I go back I'm going to find out whether it turned out that way, there may not be anybody up here. The California scores, just looking at the scores from Spring to Fall, they've dropped. Now that doesn't mean you won't find people like this but a bead of sweat emerges on the brow when you recognize a substantial number of the kids scores are lower in the Spring than they were in the Fall. And you can account for that by a variety of factors. So it's conceivable we won't find anybody. But there's no other way to look. So you use this strategy because this is one way of looking. It's the only shovel you've got with which to dig a ditch or maybe a grave.

Now what we're doing, as a matter of fact it's supposed to be finished Friday, we do this regression analysis across all teachers, and we also do the regression analysis within class so that I can look at any class (There are 97 classes.). I can look at any class on the regression line, and these marks here, now, instead of being mean scores are the scores of individual children. And one of the first things I'm going to look for is the variation in the slope of that line. If I find a teacher where the line slopes this way, that teacher's having negative effects or something is having negative effects on the performance there. You predict backwards in that class. So, we're right at the point now where within a matter of two to three weeks we'll be able to say whether we found anything.

The real criticism of most previous work on observation should be that you look at only teachers behaviors, you don't also look at student behaviors. We have a system, a behavioral recording system, in which the observer sits in the classroom and literally writes down everything that the children do and that the teacher does with respect to the students. Now if the class were large this would be almost an unmanageable task so we developed a procedure for who to look at in the class. The beginning of the year we asked each teacher to rank order every child in the class in terms of how they would expect the child to do in reading and in math. We also used as part of this test battery a standardized achievement test just as an anchor point because the other things that we were developing were criterion reference or domain reference tests. And somebody always wants to know how did they really do, where "really do" means what was their grade equivalent. So we gave the California achievement tests. Now we're able for every child in the class to look at his teacher's prediction of how he's going to do which is her expectations of how he or she is going to do and how in fact they were doing. And we sorted all the children in each class, went down the list in each class, and here's expectations and here's actual performance. We did it at the beginning of the year, and again at the end of the year. The teacher says the child will do well, and in fact he is a good reader, or she is. The teacher says poor reader, in fact he is doing well. The teacher has a high expectation and there's a low performance. The teacher has a low expectation and there's a low performance. We sorted every child in the class into those cells fudging a little on people who were right in the middle. And we took out the middle because they didn't vary enough. The teachers predicted they'd do average and they did average. So we looked at the extremes and we sampled two children out of each of these cells, one boy and one girl, and the mix represented the ethnic composition of the class. Those were the targeted children that were observed.

So when the observer went into a classroom what the observer would do, he would sit down and record everything that those children were doing over the entire day, and everything the teacher did with respect to these children. So what we have is a manageable technology for observation. At the same time, we're gathering data that's interesting. Because if the teacher doesn't interact with these two kids, in this cell, it's not very likely she's going to be interacting with the four other ones that were in that cell either. That's sampling again, there's always risk in sampling but these classes are sufficiently small that a sample of eight in some cases is half the class. And it's always about a third of the class. So you're really getting a lot of information. Secondly, you're getting extensive information, that is, you get everything that is done by these eight pupils and the teacher with respect to them.

Well that's one observation system. The other observation system tracks the teacher, follows everything the teacher does and then what the child does in response to what she does. We've used two observation systems. We had about 400 days of observation. Some teachers were observed as many as eight times in a relatively short time.

Well, those details are irrelevant other than to say that kind of a technology is what we're using in the Commission research project. We have a lot of experience with those two systems and we're using them, first of all, because they give us an enormous amount of information. In that one behavioral recording system that I described we have something like 22,000 sheets of observation, which is a lot. Now there is a lexicon for coding that material. The other system was developed by intensive observation of reading teachers over a period of time, and then was developed into a category system. And it's called RAMOS, which is not the name of an Egyptian king, but it means Reading and Mathematics Observation System. The other system, the first one, is called APPLE, and none of us can remember what the acronym stands for, not even the person who designed the system. We just can't recall it for some reason.

The strategy here is to use the field study as a device for generating hypotheses about effective performance. It also becomes an arena in which you can develop your skill in constructing assessment systems. And it makes, from our point of view, very little difference what the criterion is. The commission is not saying what public education should be up to. It's accepting what people who are responsible for public education agree it ought to be up to. So in the case of California for example, the California commission on teacher licensing and preparation said we want to look at those skills related to producing effects in reading and mathematics. That included reading, decoding skills, comprehension, application, and attitudes toward reading. And the state had laid out a whole series of objectives over a period of time that people have worked up and agreed upon and all we did was sort those objectives into those four categories and then proceeded to build measures of the different types of objectives. And in general, what we do, in any area that we work, is find an area where people are interested in particular kinds of pupil outcomes or sets of pupil outcomes.

Now we have an overall model of the data that we gather all the time. The critical thing in making an analysis of this kind is that you want to know the relationship between teacher performance, student behavior and ultimately student outcome. The distinction between student outcome and student behavior is a simple one. Student behavior is what you can see the child doing as part of the instructional process. Mainly that means looking at what he's doing in the classroom. In principle it could include observing him in other kinds of contexts. It just happens to be difficult to do that sometimes. But student outcome is a measure of the child's achievement of these significant goals of education in his stage in life, or the level of education he is at. Teacher performance is what the teacher does. What you're trying to do is to identify how much of a variance in student outcome can be attributed to variances in teacher performance. That's what the whole research is about

In order to do that you must partial out the effect of other factors on student outcome. So we gathered a lot of data on student characteristics. In fact we sent home a questionnaire (you know, pin it to them, watch and make sure they don't throw it away, as they go out the door, call up the parents, get them back, translate it into Spanish) in which we asked a number of questions about the child and so on. And incidentally whenever we do this stuff we have groups of people who screen it. We don't send out a parent questionnaire without having parents look at the thing. Now the other thing that we have picked up measures on are student aptitudes. We use a generalized aptitude test and anything else we can build into it. We've used in the California study a measure of student cognitive styles. And actually we would like to enrich that battery considerably.

There are practical problems in testing children, as you know. One of them is, if you gather everything you want to know you exhaust the children beyond belief. So you have to be prudent in how much you do. But we try to get in as much as we can.

Now, in getting back to the teacher performance we look at teachers' knowledge, e.g. we gave a decoding test to see if teachers had decoding skills in reading, and it turned out they did. We built a diagnostic test in which children read passages on a videotape, and they made errors and the teachers were supposed to identify the particular reading errors that they were making, and then say what they'd do about it. There was much more of a spread of performance on that diagnostic measure than there was on the decoding test. In other words, teachers can decode (that group of teachers) but they're not equally effective in diagnosing somebody else's errors. Which is a very useful thing to know, because it tells you where training is probably needed. The knowledge battery also included knowledge of teaching of reading methods. It included a mathematics test on the reasonable grounds that if teachers don't know elementary school mathematics they can't teach it to the children. So that was a complex of factors.

We have been building a teacher aptitude battery which has eighteen different measures of generalized aptitude. The idea is that when you're talking about aptitudes you're talking about information processing characteristics of the person. And what we were looking at is what kinds of information processing characteristics a teacher would carry around with him wherever he would go, that how those would affect the performance. And it covered such things as memory tests, ability to store information quickly, measures of creativity, flexibility and things of that kind. There were reasoning tests in there, and the logic of putting reasoning tests in there was that in teaching reading comprehension you are essentially teaching a kind of reasoning process. There are two kinds of comprehension roughly, literal comprehension and inferential comprehension. In inferential comprehension you have to go beyond the data that's actually there. You know, with literal comprehension you say "Who killed Cockrobin?" and you say whoever killed Cock Robin. And it's in the passage. In inferential comprehension you have to draw conclusions on the basis of the data that you're given.

I don't know if Bob Soar's data has held up in his later analysis, but in his earliest report there was a relationship between certain kinds of teaching performances and whether children improved in abstract reasoning skills. The teaching performances all involve such things as posing questions and encouraging the child to generate answers on his own, to formulate hypotheses and so on. That sounds like the kinds of things you'd probably have to do if you wanted to get a kid to reason about a passage. It's hard to visualize how you'd help him learn inferential reasoning skills without putting him in an instructional environment in which he has to attempt conclusions, evaluate his conclusions against the data and so on. So, what we were curious about was what the status of the teachers' aptitudes would be in this respect. If they "weren't very good" at inferential reasoning, it strikes us as unlikely that they would be doing much of those performances that required them to help the child with his inferential reasoning. We also had a measure of teacher cognitive style. Without my elaborating you can seen why we had the student cognitive style measure and the teacher cognitive style measure.

We also looked at school characteristics; had a long interview with the principal, and we studied administrative climate. We had some data on teacher characteristics - standard background information. We did an administrative climate study in which we asked the principal to talk about how he handled things and we asked the teachers to talk about how he handled things.

Now when you have a set of factors like this, one of the interesting problems to think about is causality. What most people do is a multiple regression study in which they continually partial out the relative influence of these different factors then they end up saying teacher performance accounts for only 5% of the variance. We're doing something like that but a little more complicated. We're doing essentially a structural model analysis. Now what a structural model analysis requires you to do is to make decisions about causality, the hypotheses really, and then use the techniques that are involved in doing structural analysis to test your model which strikes me as a much more enlightened way of going about doing research then what we usually do.

Now I'm going to draw some arrows here. Whenever I draw an arrow it means that A affects B in the true causal sense, that I can account for this by looking at that. I'm hesitating at administrative climate because I really don't have either the theory or data to know what it effects. So I'm going to guess and do this. We assume that these factors affect directly teacher performance and these these factors are related to teacher characteristics. Now school characteristics, when you're not sure what's horse and what's cart, what you do is talk about it as a correlation - you draw a curved line with arrows at both ends. And the statistical analysis simply takes into account that correlational relationship but it doesn't enable you to partial out causality. I would say, e.g. that you really have to think about there being a correlation between school characteristics and student aptitude. But its hard to figure out what's horse and what's cart. So, is it the aptitude that makes the student characteristics or is it the school characteristics, or do the school characteristics to some extent affect student aptitudes. Some programs may very definitely affect aptitudes. You think of aptitudes more broadly than the usual verbal aptitude stuff. For example, visual information processing skills is an aptitude, I think, which intuitively is highly sensitive to environmental factors, I mean instructional factors. So that if you get a lot of training in visual information processing, you have visual information processing skills. If you don't get a lot of training in that, you don't have them. So you give a spatial visualization test, it may very well be a function of the extent to which the instructional program emphasizes visualizing things in space. You people are into learning disabilities so you're familiar with the study of perception and that sort of thing. That's the kind of thing that we try to lump into this student aptitude battery and then we're saying if you talk about school characteristics you can talk about programs. Do you have perceptual training programs in the school? If you do that would affect aptitudes. Also, however, you can look at school characteristics as the function of the kinds of children that are sent to that school. So schools will differ in aptitude levels purely as a function of how they're sorted into schools.

So what you do is you make up these arrows. I'm leaving out a few arrows here, and you do a structural model analysis, path analysis. And when you get numbers on this, what you get, essentially is a vector, and the number is the magnitude of the vector and the diagram tells you the direction. And you can trace indirect effects. For example, I can trace the effects of teacher characteristics, teacher knowledge, teacher performance, student behavior and student outcome. There is a path through there, and I can tell you how much each component in that path contributes, and which component contributes the most to student outcomes. That is exactly what we're looking for.

Now structural analysis is a common statistical technique. It's used mainly by economists; it's just a variation on multiple regression analysis. But it's the style that goes with it that counts. That is, you've go to lay out this path diagram before you do the formal analysis. When you do multiple regression analysis you do all the calculating and then you try to account for the results ex post facto. You say this relates to that, and this relates to that, and this looks like that, and so on. Now what we do, is we use all these data that we've constructed in the field study to do this type of structural analysis and to identify those characteristics of teachers which distinguish them from other teachers in terms of whether they're outliers or not.

That's one big strand. Every study we build has a field study component in it, because we need a procedure by which we continually generate new hypotheses about effective teaching performance. And if we do studies in a variety of places as we're planning to do, you get a lot of variation in school characteristics and administrative climate and student aptitude and so on. Now we're trying to design studies in New York in conjunction with the State Department and the New York State United Teachers that will probably be concentrated in two places: New York City and one upstate area. I sometimes say my idea of upstate New York is the Bronx but I've been disabused to that. We've been talking about Syracuse, but we're looking for one of those large metropolitan areas that has a mixture of middle sized urban, suburban and rural constituency in schools.

Where we work is really a function of a lot of things. First of all the three of us have to agree on areas and one of the sources of agreement, one of the bases for agreement is whether there's a kind of labor peace there. There's no fighting between the board and teachers. Because you could never conduct a study in that area. The other is you've got to be able to pull together a research staff in that area. Those are two general requirements. The other places we're working are Detroit and Lansing, Michigan, Toledo, Ohio and we hope eventually to be doing and some more work in California in conjunction with the State Department and the California Teachers' Association. And eventually in Texas and Miami, Florida. So the projects will include most of the major urban areas, in the United States (New York, Detroit, San Francisco, Los Angeles, Miami, Houston or Dallas) and, presumably, whatever comes out of that research will have some credibility. If the same data show up in New York as show in Texas, the Texans won't be able to say, "Well that's New York." Nor will the New Yorker be able to say, "That's Texas." Or if there are differences we'll be able to relate it to something meaningful other than the fact that we live in different parts of the country.

I have neglected to say that most of this research is conducted with experienced teachers. That is, the people we're looking at are people teaching in real classrooms. And the logic of that is that if you can find people who are effective there it makes sense to look at them. We pick experienced teachers because they've adapted to the system in some way, that is, they can work in classes and with kids, and so on. Now in the process of course, it is conceivable that we've missed somebody who is an outstanding teacher and dropped out of the system after one year because he or she can't stand the system.

I really don't know how big a risk it is. I'm sensitive to it because when I was a professor in the West one of the hardest persons we had to place was an intern, an exceptionally bright young woman, dedicated to teaching, but she was of her own mind. We were over in Castro Valley, California which was a center of John Birch activities and she walked into the principal's office and she had no chance of a job the minute she stepped inside the door. She was a very bright young woman, very adept, skillful and worked well with children. But she's hard to place, and she was reaching the point where she was so fed up with the system she was not longer willing to try to find positions in it. So we may be missing people like that who if we could watch would have very unusual characteristics. As I say, I don't know how big a risk that is.

On the other hand, the research has a real atmosphere of reality about it. We're looking at real children under the ordinary circumstances of schooling and teachers who are actually working with those children. Now, once we get a set of hypotheses we then begin the second strand. So one strand is this field study down here, and that's going on continuously. The other strand is a series of experiments, and that's the experimental strand. That's the hypothesis testing. The field study is the hypothesis generating. So this is hypothesis generating, and this part up here is hypothesis testing. Now what we do in that component is take a group of teachers and essentially put them through the following kind of sequence of events.

You first have a training experience. Then they move into actually using the skills on which they have been trained in a classroom during which we observe them, this is classroom performance and at the end of this sequence of time we measure pupil outcome. We learn a lot with this particular strategy.

First of all, in the training part we try to use, or will try to use, different training methods so that we get a test of the viability and the effectiveness of different training procedures. Do you use models? Do you use feedback? What combination of models and feedback? How much is direct instruction? Who mediates the instruction? We'd like to bring in some administrators to do some of the training here to find out whether, you know, the general belief that they ought to be more involved in the improvement of instruction has any possible effects on achievement. But there is great freedom at this point to devise different types of training methods and try them out and find out what's effective. But the training is on specific skills.

You then observe the teacher using the skills to see if the training carries over into the classroom and then you look at the effect of the specific skill. This connection between these two pieces of data, the pupil outcome and the observation tells you whether if they do A does it produce B. And that's the real test. This part tells you something about transfer of training from the training situation to the classroom situation and it also tells you something about effective training methods.

Now those experiments are relatively small scale, we'll be using fractional factorial designs which permit us to use a relatively small number of teachers but still get a very powerful set of experimental data. They will be relatively short term in length, i.e., we usually say the training is the equivalent of one week intensive training and this is the equivalent of two or three weeks observation. That varies depending upon what the skill is or whether you can treat a skill as independent or you have to do a couple of skills at a time. And, in general, we plan the study so we do two or three experiments a year, or four. There's a limited number of days you can work in schools because of holidays and everything else that goes on. So this requires a continuous run of activity. So there aren't many blocks when they're all there for long periods of time. So you can do about four experiments a year.

Now all these studies are the combination of the field and experimental studies; that is, the field study keeps feeding in ideas for skills to be tested in the experiments. Experiments will probably give us ideas for other things to look at in the field. These studies are continuous over time, i.e. they all are planned to last about five years and stay with the sample of teachers during that five year period. So it has some of the advantages of a case study. You're looking at the same people year after year after year and you accumulate an enormous amount of data on those teachers. And that becomes, in effect, a case study of those teachers. The overall strategy has the advantages of a lot of field data to generate hypotheses. It has the advantages of doing experiments to test hypotheses. It is longitudinal in character, it uses live observations of people, and it has the advantage of gathering so much data on teachers in schools that in fact you can do intensive studies of individual teachers over time and you gather a lot of information about the schools themselves.

So that's the overall framework. I hesitate to say we'll work with anybody because that makes me sound like one of the major service institutions and I'm not thinking of the police and the fire department. But we are interested in getting a range of projects in terms of the following characteristics: diversity of pupil outcomes, and diversity of settings, and we prefer scope and breadth rather than small chunks of research.

I think we've conceptualized the strategy which if we can bring if off is a vast improvement upon what we've been doing. We're not doing simple laboratory studies one at a time. So if there is anything to be found here I think we've conceptualized the strategy that's likely to find it.

We are working with the relevant groups, the State Department of Education in New York and NYSUT. The proposal's been presented to the people in the State Department, up above. Vince Gazzetta, and Mike sit in on all the meetings, Chuck Santelli, Jeannie Kemble sit in on all the meetings. We work as a team in designing the study. It's been presented to the executive committee of NYSUT and, if you read the New York Teacher, Tom Hobart, in an issue or two, referred to it. The idea behind all of that is that if these results are to have any meaning the people who are going to be affected by them have to be participants in the process from the beginning.

As a matter of fact we're taking an entirely different position with respect to the role of teachers on research. We have to state our official position: that teachers are co-researchers in this process. Now the standard objection is they don't know any research. That objection is not a very good one.

First of all, teachers as a group are intelligent people. What we're doing here is not very fancy. The mechanical statistical part of it you need special training for, but the rest of it reasonable people can think about. And, speaking from the viewpoint of the research community and the academic community, it seems to me it's in our best interest to involve teachers because the way you learn research is by doing it. And if you want the public, which in this case is teachers and so on, to support educational research, they really ought to know what it's doing and be involved in it and understand it. We've pretty much taken that official position. We've worked through the organizations, and we involve teachers at all levels.

The New York Project will have teacher review panels and administrative review panels. They look at materials because we don't want to be a bunch of researchers that go out and ask people questions that offend them, and probably don't have any utility as far as ideas are concerned anyway. So that's our style. It is a somewhat different style in research and it has real difficulties. When I insist, for example, that teachers be co-participants on these projects, not in New York but outside of New York, I create trouble. And I'm regarded as a trouble-maker. You know, you're from the Eastern establishment, you're coming in here telling us what to do....I say, I'm not telling you what to do.

You don't have to work with us, and we don't have to work with you. But we're not going to work on this project with people being sort of first class citizens and second class citizens. Practically, you learn an awful lot from teachers that are involved. We've worked very closely with people that are experienced classroom teachers and when you're dealing with this kind of research you know they know what's going on and what's do-able and what isn't do-able. Certainly some person like me, living off in the wilds of Princeton, doesn't have that kind of familiarity.

Well, that's what the Commission is all about, and I should really stop talking, and I apologize for talking so long.

Thank you.

ASSESSMENT IN CBTE: SOME TEACHER CONCERNS AND CONTRIBUTIONS

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I am here this afternoon to attempt to articulate some of the concerns classroom teachers have with assessment in teacher education programs and to highlight what I feel are some contributions teachers can make to the process. I would be remiss if I did not make it very clear from the beginning of my remarks that this is a role with which I feel uncomfortable. For too long all sorts of individuals have been speaking for teachers without systematically determining the attitudes, perceptions, feelings, values, and opinions of classroom teachers. I have no desire to add to this. What I say here will be my viewpoint, the viewpoint of an experienced classroom teacher who now works for teachers trying to help them deal with their own particular perceived educational needs and what I say will be based on both roles I have filled.

Competency based teacher education as a movement and as a reality in New York State is a phenomenon that I have always viewed with a critical eye. Teachers in general have seen fads and innovative practices come and go over the years with little impact on improving the quality of education for children. What I am really saying is that in addition to all the specific criticisms leveled at CBTE, with which we are all familiar, we teachers, for good reasons approach any new programs imposed from above without significant practitioner input with a certain amount of cynicism. To state it simply and to the point: I view assessment as the most important factor in the future success or failure of CBTE in New York State, and I also am convinced that teachers are the one group that is going to make CBTE work if it is going to be a success. To not give proper consideration to assessment and to teachers will build in automatic failure in any teacher education process or program.

I prefer to look at assessment in the context of an Input-Throughput-Outcomes-Impact Model. In a teacher education program in assessment the supreme test is the impact on society or at least on the educational process of the teachers that have gone through the program. The desired impact should be articulated in broad goal statements. The problem inherent is that in education, and similarly in other areas of social concern, to conduct a legitimate impact analysis would require collecting data over the entire professional lifetime of the teacher. Obviously this will not do, so we must go back one step in my model and look at Outcomes.

Measurement of outcomes is the assessing of the extent to which the pre-service teacher has reached the objectives set for the teacher education program. I believe that, to have any utility, these objectives should be explicit, public, and, to the degree possible, quantifiable. A major contribution of teachers to CBTE assessment is playing a major and significant role in the development of these objectives. Lest anyone has not already made the connection, the objectives about which I am speaking are statements of the skills, knowledges, and attitudes a pre-service teacher is supposed to acquire as a result of the program.

Three problems come to mind immediately:

1. How do you know your objectives are meaningful and valid to meet your goals? The answer is simple. You don't and probably can't in the short run. Only after years of program operation and with sophisticated evaluation devices can this question be answered with any degree of objectivity and surety. This is why major and significant teacher involvement in developing objectives is important. If you can't scientifically assess the appropriateness of your objectives, then let's at least have the people in the field, on the firing line, the people most familiar with the ultimate job to be done set the objectives. Reality testing must suffice for the time being.

2. Secondly, developing an assessment program to measure movement toward meeting these objectives is no easy or simple task. Here I don't offer solutions, but only highlight problems and concerns. If the pre-service teacher fails to meet X number of objectives, does this indicate a deficiency on the part of the pre-service teacher or program deficiencies? How do you control for the effect of factors external to the program? Or don't you really care? If the assessment process is going to have any degree of cost effectiveness, how do you deal with the problem of fair and comprehensive assessment of a wide range of objectives? How do you build in a due process system to insure that no pre-service teacher is unfairly dealt with? This task is difficult and crucial to program success. The development of assessment systems are the proper purview of skillful competency evaluation research specialists. I might add that few of these presently exist in education, either in the field or in colleges and universities.

3. Thirdly, is the problem of people with the proper training and skills to conduct the assessments of pre-service teachers. This is going to be a time consuming task. Without dwelling on it at any length, let me say that it also requires specialization and skills that are not now widely found. This is too important a component to be left to amateurs.

Beyond these three problems there are other considerations that must be dealt with and that are of concern to teachers.

The first is a strong warning; using the model I mentioned earlier, outcomes are not impact. Don't unconsciously make that confusion! The state of the art in educational research is that we cannot simply make facile connections, assuming a causal relationship between teacher behaviors and student performance. I repeat, the research is not there! In fact, this is the rationale for a joint research project of the New York State United Teachers, the New York State Department of Education, and the Educational Testing Service connected National Commission on Performance Based Education that is now in its beginning stages. This research project is heavily classroom based and this is an example of how actual, real, in-the-flesh classroom teachers can make and are willing to make a great contribution to solving our dilemma. We need much more work and research in identifying teaching skills, developing and using training materials, and in demonstrating the effects of these skills. Teachers deserve and demand greater participation in these processes.

Another concern stems directly from the monumental task to which I have been alluding. Great care must be taken to insure that any shortcut that leads to greater individual program conformity rather than to greater individualization in the teacher training process wil not be taken. The temptation will be great, but it must be overcome. While paying lip service to all that is involved in formative evaluation or assessment and to criterion referencing in assessment, we had better not fail to come through. All I am saying is that, especially considering the pressures of time and the frustrations of inadequate research, if we take shortcuts, leave out essential elements, and design superficial assessment programs, we are taking a giant step backward in teacher education in this state and teachers have real fears along this line.

I previously mentioned due process guarantees. Formalized processes must be built into every assessment program to insure a fair and equitable recourse for those people who may feel that they were dealt with unfairly in the assessment process. This is due all candidates as a matter of basic human right and is particularly a concern of teachers for assessment in programs leading to permanent certification. Teachers would welcome the chance to assist in the development of due process procedures and it is incumbent upon those with management and decision-making responsibilities in CBTE to insure that teacher views are solicited and are carefully considered.

I have been discussing what teachers can do, and I should mention what I think they should not do. I feel strongly, and many teachers share my view, that cooperating teachers should not be part of any assessment or evaluation of pre-service teachers which would be of a summative nature. In order to maintain the non-threatening, professional, and helping relationship that must exist between student teacher and cooperating teacher, the sole responsibility for evaluation must remain with the college or university personnel. This is even more crucial for field experiences in programs leading to permanent certification.

Yet another concern of teachers in assessment is in the area of the use of assessment data. This information should only be used for the purpose for which the data is collected and strict confidentiality should be maintained. Release of this data to potential or current employers perverts its original purpose and will lead to rapid deterioration of any kind of cooperative relationship in the assessment process. Assessment will become a strategic game and education will suffer.

A final word. Local contracts between organized teachers and school districts are legal agreements mutually developed in a complex and highly political environment. Assessment may well bring college people into the schools--at least I hope it would. The contract must be respected in every way. Violation by ignorance is no excuse. A word to the wise should be more than sufficient on this topic.

I hope I have given you an idea about the kinds of issues and potential problems about which teachers have concerns. I hope also that you maybe now have a better feeling of ways in which teachers can make important and useful contributions. As emphasized before, assessment is a key to the success of CBTE and teachers are the key to assessment procedures. Involve teachers, listen to teachers, heed what teachers have to say. Solicit true teacher views and don't let others speak for teachers.

CONTRIBUTIONS AND CONCERNS OF PUBLIC SCHOOL ADMINISTRATORS

Gilbert Duken
Broad Street School - Plattsburgh

I was pleased to be asked to speak to you regarding some possible concerns that School Administrators may have regarding the many phases of the CBTE Program. It's truly a great opportunity to be able to look ahead in the endeavor to identify potential problems, for too often administrators spend more time then they care to in the process of solving problems rather than preventing them.

As all of us know, problems can be found everywhere that we care to look. Often it's advisable to ignore them as I did at my home yesterday. Just before I was leaving, my wife inquired about my lodging arrangements. Her response to my staying at a Seminary was a strange one. I've been wondering now if maybe I have a problem for I'm not sure she believed me. Communications are bad all over!

Speaking of communications, there's a story that I'd like to share with you. I was visiting a neighboring school recently and had occasion to overhear a conversation in the Faculty Room. Someone had just said, "C-B-T-E, what is it?" Several teachers responded. For example, one teacher offered that CBTE meant Creating Bothersome Teaching Experiences. Another clearly stated that CBTE really stood for Correcting Backward Techniques of Education. Another added that the letters were for Curse Brought to Education. Previous to this analysis of initials I had been sure I knew that CBTE meant Competency Based Teacher Education, but suddenly I left that faculty room wondering just what did it mean to me, and what does it mean to my faculty.

It appears that there are a variety of attitudes concerning Competency Based Teacher Education and its expected impact on public schools, teaching, and the student. I'm pleased to say that I'm finding a positive reception to this new program, which by consortium design assures input from the various interested and involved elements. This consortium team is charged with a difficult task: that of identifying appropriate competencies and establishing activities by which measurement may be achieved. Although competency identification, etc. is a significant start, indeed the next step seems to me to be the crucial one. The present small team approach must now execute a concerted effort to achieve full-bloom support and enthusiasm from all the many publics in education. I strongly believe that our CBTE Program is doomed to failure if we overlook our obligation to public relations. We must educate all educators regarding this new program and seek their positive participation and cooperation previous to program implementation and previous to discovery of anticipated program weaknesses. It is imperative that all be a part of the force that solves the problems, not creates them. Let's not be like the man who met major difficulty when putting the watermelon into the refrigerator because he avoided initially taking out the beer cans.

Indeed, it is foolish then to have a competency program if there is no room for it in the minds of our publics. So we ask, how can we present this program so that we eventually achieve enthusiastic and spirited team support? This will probably be the most difficult task we have, for apathy and lack of commitment of people to work together continues to be the eternal plague of group effort and achievement. Nevertheless, the CBTE program should have a head start toward achieving extensive commitment by the very fact that the competencies have been conceived, written, and in essence accepted for initial operation from all the areas of concern via the consortium approach. A warning however, if you have not begun this way then already you have a significant handicap and have overlooked a wealth of contribution necessary for a balance of opinions which will surely be encountered throughout the CBTE program. A narrow approach now may very well develop into slim participation later and result in opposition which may generate problems that might have been avoided.

The first major concern then is to attempt to achieve total involvement, not only with the consortium approach to competency writing but especially in educating the many publics previous to program implementation. This public relations effort does not have to secure innumerable participants, but, if done correctly, it will obtain a following of informed, and interested persons who are ready to supply a positive force of support and peripheral assistance. To build such a force, I recommend the following:

1. Broad Orientation Meetings be made available for all teaching personnel. Such meetings should clearly present the many positive aspects of the CBTE program and indicate direct professional and personal gains to be expected or desired from such a program. Attempt to redirect all the negative concerns in such a way that soon those who were asking why, become the ones to ask why not. Try to schedule these meetings at individual buildings during convenient times for the teacher.

2. Specific Inservice Orientation Meetings or Workshops seem necessary for those Special Education Teachers who are considering the role of cooperating Teacher and therefore will have a more direct responsibility with the CBTE program and student teachers. Two major concerns that may be dealt with via this Inservice Workshop approach are:
   A. The cooperating teacher may have been previously prevented by time, distance, or some other reason from participating in recent professional courses and therefore be, or at least feel, inadequate at providing the necessary experiences for the student teacher. Hopefully these available workshops, meetings, courses, etc. will alleviate this concern.

   B. Secondly, possibly separate from, or in conjunction with these meetings on up-date teaching methods, is the opportunity for cooperating teachers to become informed of the method of management or implementation of the CBTE program. The cooperating teacher must understand his role and responsibilities and he must accept both, before participation can occur which is positive and productive. This is not only important for the cooperating teacher's success, but it will eliminate problems for Institutions of Higher Learning if the process is previously understood and acceptable to those who are most directly involved.
3. My third recommendation for building a CBTE force is to have the selection of participants based on merit, which can only be achieved if the program is attractive and valued by its potential participants. To make this possible, a system must be devised which significantly acknowledges service rendered. The most obvious way to do this is for the cooperating teacher to be financially reimbursed for these services. If this is not feasible, then consideration might be given to the waiver reward; or perhaps college facilities be made available which would not otherwise occur.

If indeed these cooperating teacher services are truly valued then our institutions must do something to properly indicate it. Although teachers are motivated in many different ways and will often give their best far longer than the best is given them, they nevertheless have a legitimate complaint when their use in the teacher-training program of any and all institutions is abused. For indeed, they are not paid to be cooperating teachers and deserve some motivation beyond professional dedication for becoming so directly involved and responsible for the success of the teacher-training program.

Therefore, it is vital that we obtain positive and optimum participation previous to the CBTE program implementation. May I urge those responsible to attractively and meaningfully and conveniently motivate and encourage total understanding and involvement from as many publics as possible from the very beginning.

The second concern which I see is a weakness that may be the offspring of the desired consortium approach: having many individuals a part of the continuing CBTE process. The consortium vehicle which I believe is necessary for ultimate success may also carry with it an undermining element if we are not careful. This element of destruction, as I see it, is the team that has no designated captain, or the vehicle, if you will, that has no driver. Everywhere that the CBTE program exists there must be a recognized leader who's indisputable reponsiblity it is for the success of this program, and the democratic administration of it. Cooperating teachers do not want to tell the Institutions of Higher Learning how to run its business. However they do expect openness to suggestions and participation-requests of them which are meaningful and appropriate to the goals of the program. Surely we want to avoid the type of situation which was encountered one day on a street in New York City. It seems this man was standing on a corner minding his own business, when a bum comes up to him and snarls, "Gimme a buck!" The man was slightly taken aback by the comment and stood right up to him and said, "What do you mean, a buck?"

The bum said, "You heard me, buddy!"

This time the man raised his voice and said, "Look! If you asked me for a dime, or a quarter, or a half dollar even, but a buck! You must be out of your mind!"

Then the bum said, "Get this, buddy, you can cough up the buck or not, that's up to you, but don't tell me how to run my business!"

Although we are all privileged, and pleased to be a part of the CBTE team, we must be sure we know who our leader is. Let us not make the mistake of telling the Institutions of Teacher Education how to run their business, and let's hope they will not make the mistake of not seeking our valued advise and assistance.

However, knowing who the leader is, is not enough! The leader must also know who he/she is, and meet the responsibilities of this role. The failure to do this will ultimately result in program deterioration. As an administrator, I worry about inadequate leadership, for I want all my programs and my teachers to meet with maximum success. Avoiding problems is much more pleasant all the way around, and therefore, I'd like to suggest three considerations of leadership which I'm sure are obvious to us all but which unfortunately continue to be the agents of failure. They are:

1. Communication must be established which is continual and convenient.
2. The management model and the program goals must be clearly understood and organized, yet flexible enough to meet individual needs and problems.
3. The leadership must provide appropriate and consistent evaluation activities that concern all areas of the CBTE program and provide avenues for on-going channels of improvement.

The leadership role is a key-role and although the Colleges can share some of the duties of leadership they can not legally give the responsibility for it away. We have every right to expect our Institutions of Higher Learning to provide inspired and energetic leaders. For, without a doubt, program achievement in any undertaking, directly mirror the quality of leadership shown.

A third concern I have is not as obvious as the other two and does not effect the success or failure of the CBTE program. Rather it is the pupils or the student teacher which could possibly be adversely affected; perhaps receiving an incomplete curriculum due to pressures placed on the cooperating teacher and student teacher in the competency based program.

In the past, the student teacher has often had to "fit the mold" of the cooperating teacher's classroom, carrying on in her traditions, with limited regard to specific teacher education goals. Although I see no drastic changes in this situation, I nevertheless anticipate some modification in teaching methods by the cooperating teacher to meet the demanding student teacher competency programs. This will obviously have its advantages, but it could have its disadvantages also. For example, we may find we have a few teachers who suddenly make selections of their curriculum activities based solely on their ability to measure competency levels of student teaching. Or, worse still, they may decide to determine curriculum, as well as classroom activities that primarily are designed to measure competencies. Although I don't see this concern to be an extensive one, I nevertheless feel that administrators should be alert to the possibility. I was particularly reminded of this area of concern last week when I was reading my daughter's ski magazine. It contained a short story which clearly illustrated an exaggerated effect to a child who had been over taught in one skill to the detriment of learning another. The story took place on a ski slope in Wisconsin. The youngsters were having the time of their lives and skiing with an amazing degree of skill. One little tyke who couldn't have come higher than my knee, strode into the warming house, accompanied by his not-much bigger sister. When the little fellow was asked by one of the grownups if he could really ski, his only answer was a toothy grin.

"Of course he can ski, Ma'am", his sister volunteered, "but he can't talk yet."

Although this story over simplifies my point, I nevertheless believe there is reason to be cautious and concerned that cooperating teachers and student teachers not neglect the total curriculum and skill areas of academics, in the procedure of meeting isolated competency levels. Every effort must be made by all involved to choose student teacher activities and experiences which meet the needs of the pupil first, and secondly the goals of the student teacher.

The school Administrator is the one responsible for assuring that this concern does not materialize. It seems that the easiest way to do this is before the problems exist; therefore, selection of good cooperating teachers must be achieved. As mentioned earlier, selection for this program should be based on merit, for good teachers would know how to improve the program for pupils with student teachers, which is as it should be.

Earlier I indicated the need for our program leaders to have management models and evaluation techniques which were organized, understandable, and appropriate. Again I mention this, primarily because I see the cooperating teacher as a central figure in the evaluation process of the student teacher. My fourth concern then is that this process is reasonable and practical to accomplish. I am fearful that the evaluation and management processes can become confusing and/or troublesome. Should this occur, it will either severely detract from the teacher's class and planning time, or he/she will become discouraged and not be willing to act in the capacity of cooperating teacher. Either way we have a problem. Therefore, I hope all efforts will be employed to conceive an appropriate process and select effective and efficient tools to implement this process.

Equally important is how this evaluation effects the student teacher. We want to be sure we "turn them on", not "off". As Norman Vincent Peale said, "Most of us would rather be ruined by praise than saved by criticism." This must be considered in our methods or reporting and record keeping. No student teacher should be abused by our program, fairness must be an essential ingredient. There's a story of an alledged injustice in evaluation which amuses me. Instead of recording something on a critical analysis sheet, in this story it was a ship's log. On that day, the captain entered this brief account: "Mate was drunk today." When the mate became normal, he was terribly chagrined and angry; he pleaded with the captain to strike out the record; he declared that he had never been drunk before, and promised he would never drink again. But the captain said, "In this log we always write the exact truth." The next week the mate kept the log, and in it he wrote, "Captain was sober today."

Evaluations can be misleading. Let us be careful to avoid these kinds of problems, as we determine our evaluation process.

Still another area of evaluation we must not overlook is the need to evaluate the competency itself. We are just beginning and there's much to be learned. This evaluation process too must be carefully planned so that we continually grow in a constructive, positive and cooperative manner.

In any event I am eagerly awaiting the implementation of the CBTE program with all student teachers. Far beyond the many areas of concern we may have, we have every reason to expect numerous professional gains, far in excess of the anticipated problems. I believe the competencies will not only prepare better teachers, but I believe they will motivate our existing teachers to improve their programs and methods. Hopefully too, this program will help our students who are education majors to recognize their teaching abilities and inabilities earlier than in the past, allowing them, if need be, to select alternative career training curriculums, consistent with their talents and abilities. We all know that a doctor buries his mistakes, and an architect advises his clients to plant vines, but what do we do with the mistakes of teachers? Or, maybe we should ask what can we do to avoid employing teachers who make mistakes. Perhaps our CBTE program will provide us with a giant step toward this solution. No question about it, our strides are getting longer, and we're on the right road to uplifting the quality of teacher-education and teaching. But most important, this quality will produce better programs for children, and particularly handicapped children.

CONTRIBUTIONS AND CONCERNS OF PUBLIC SCHOOL ADMINISTRATORS

Michael Solimando
James E. Allen Learning Center

I appreciate the opportunity to speak about the contributions and concerns of the school administrator as Competency Based Teacher Education programs begin to unfold. I might add that the word-reactions could also be included in describing this administrator's commentary as some of my remarks this afternoon will be in the form of reactions to several aspects of the CBTE movement as it pertains to Special Education.

One of the initial concerns and tasks for the school administrator will be to provide some enlightenment and education about the term - Competency Based Teacher Certification. For example, does this term imply that teachers who may be from out-of-state or be veteran teachers and who have not been through a competency based program are not competent. Obviously not, but parents of children in Special Education have been dealing with labels for many years. Priorities, in terms of labels, are developed by parents, individually and in groups. Parents in Special Education relate to labels and place significance or meaning, sometimes incorrectly and inaccurately, on such labels. It will become a responsibility of the special education administrator to educate parents as to the meaning of Competency Based Teacher Education and Certification and what it does and does not imply.

Veteran teachers may need some guidance and direction from the school administrator in acquiring an understanding, if not an acceptance, of the term CBTE as well as the substance of this new development. The role of the school administrator with regard to the Cooperating Teacher may be the area of greatest concern to the administrator and the area in which the administrator's role is most greatly affected. The significantly different approach to the education and certification of future teachers will necessitate a different view of who or what type of experienced teacher should be sought for service as cooperating teacher for pre-service teachers. If, in some situations, the cooperating teacher was always a reflection of the administrator supervising that teacher that reflection will be shattered by the CBTE movement. The word ORCHESTRATE becomes prominent in this regard. More and more it will become the function of the school administrator to orchestrate the efforts of the several individuals or parties to the preparation of would-be teachers within the framework of Competency-Based Teacher Education. The new and greater involvement of the teacher-training institution, the local teachers' unit and the cooperating teacher will cause changes in the role of the school administrator with respect to the cooperating teacher.

Much has been said and written about the status of teaching as a profession. We in education are compared to other professions and fields of service with the conclusion very frequently emphasizing those areas in which we fall short of the full status of a profession. Literature prepared in support of CBTE cites the development of competencies that will provide the adequate and systematic knowledge base which our "profession" so desperately needs. School administrators should welcome, encourage and help any efforts which will provide the service of teaching with the full status of a profession.

Turning to the identification of the specific competencies, the acquisition of which will lead to certification in areas of Special Education, what is emerging is a group of competencies sufficient in breadth and scope to both permit and encourage varying objectives in Special Education teaching situations. As we know, labels, particularly so-called diagnostic labels, such as mentally retarded, brain-injured, emotionally disturbed, etc., are employed principly for administrative and organizational purposes but certainly do not mean that each brain-injured child is a carbon copy of another child with a similar malady. As an administrator in Special Education, I do not see a diminution of the eclectic approach which many of us in Special Education hold in high regard.

The nature of the supervisory or evaluation process as practiced by the school administrator may undergo some change as the number of practicing teachers who have been prepared via the CBTE route increases. Because of the complexity of the competencies that are being developed within Special Education and the resultant number of possible objectives for a particular class or gruop in a given lesson, the Pre-Observation Conference will become more and more commonplace. Administrators will find it necessary to obtain initial input from the classroom teacher in terms of competencies to be demonstrated, objectives to be attained, etc., prior to conducting the formal observation. The administrator will, in many instances, not be able to walk into the classroom without some prior preparation if he is to provide the classroom teacher with additional support, other ideas or means of achieving the same objectives and constructive criticisms.

In coming to a conclusion about the school administrator's involvement with Competency Based Teacher Education and Certification, I would like to cite some of the positive "spin-offs" which this movement has had and will continue to have for Special Education:

a) Movement to Criterion - Referenced Assessment;
b) Education courses and the fact that there is no longer a prescribed set of courses;
c) Evaluation in terms of student progress, with the understanding that the teacher and/or the school do not hold all of the influencing factors;
d) Emphasis on the end product, the measureable, the obvious and the concrete;
e) Affective education and the fact that education of the affective domain can and should be included in Competency Based Teacher Education.

Lastly, I would like to comment about one aspect of CBTE which has been mentioned at this conference as well as at other forums and in the literature. These concluding remarks relate to my earlier comments about the status of teaching as a profession. This movement may very well find itself more and more in the realm of a labor issue which could result in additional problems and differences among staff members in any particular school or locale. Should such a development occur, one would hope that the issue would not be over the trivial or mechanical aspects of CBTE but, rather would be whether or not this movement will provide the adequate, validated knowledge base for the teaching service to attain the full status of a profession.

CONTRIBUTIONS AND CONCERNS OF TEACHER EDUCATION STUDENTS

Karen Cochran
SUC - PLATTSBURGH

First, I would like to mention that I am presently doing my student teaching in an EMR class with eight pupils - three girls and five boys. The following points are raised in an attempt to determine effective procedures for assessing student teaching experiences.

When we talk about competency based teacher education we mean that a future teacher should be competent in the academic area of his or her own education: a basic core of academic subjects and electives. A series of method courses in actual teaching procedures and techniques could be most effectively evaluated by the respective university.

In the actual student teaching experience, the cooperating teacher is an important person, especially with respect to assessment. She will help you identify your strengths and weaknesses and offer possible solutions to problems. A cooperating teacher is best qualified to assess your competencies because she is most familiar with your performance in the classroom. Her assessment may be formal or informal. Both are valuable to the student teacher since you have the benefit of her experience to guide you.

Feedback in the classroom is another good way of assessing a student teacher's competencies. After a student teacher has taught a lesson, it would be beneficial for her to review the material to see what the pupils have gained.

School administrators are also valuable in assessing student teachers' competencies. They actively observe the student teacher's interest and attention to performing duties within the school situation. They also observe the student teacher's attitude and enthusiasm with relation to extra curricular activities.

The college supervisor acts as liason with the college. He visits the student teacher in her classroom in order to assess what progress is being made. The more frequent his visits, the more accurate will be the evaluation of progress.

So far I have discussed the people who would be involved in an assessment of the student teacher's competencies. How would these people go about their evaluation? Informal meetings and discussion groups with the student teacher would be helpful. These evaluators attempt to work with the student teacher to guide her in finding her own solutions to problems or to discuss different approaches to problems that the student teacher might be having. These people help the student teacher refine her techniques and acquire a degree of professionalism and respect for her role in the education of children. Constructive criticism and praise, where earned, are valuable forms of evaluation to the student teacher. If the college supervisor and cooperating teacher work closely with the student teacher in evaluating her teaching techniques it would make it a more valuable experience for the student teacher. For example, perhaps the student teacher could sit down with and compare her own self-evaluation of a particular lesson with her cooperating teacher's and college supervisor's. Having the classroom pupils answer a questionnaire about what aspects the pupils enjoyed and benefited from most could also be valuable to all concerned.

Self-evaluation is also an important part of the assessment of competencies. The student teacher would have had first hand observation opportunities up to this point. Learning from observing and comparing techniques observed from the student teacher's own situation would also be valid form of self-evaluation. The student teacher should use the practice teaching situation as a trial period for testing out the best teaching techniques which would suit the individual's personality. The student teacher should attempt to evaluate her own rapport and interaction with the pupils based on a feeling of mutual respect and trust.

CONTRIBUTIONS AND CONCERNS OF TEACHER EDUCATION STUDENTS

Nathan Glasper
S.U.N.Y.-ALBANY

I have reached a point in the course of my student teaching where I am aware of several concerns. One of the most urgent is the direction of certification and training for elementary and secondary school teachers. Since my affiliation with the National Teacher Corps began in the summer of 1973, I have seen examples which lead me to believe teaching is perhaps the most pampered and paranoid of the professions.

I have heard teachers complain about the unfair treatment of education by society. Most teachers feel that taxpayers should allow the schools to completely control their childrens' lives and that the schools are not accountable for the product they produce: namely a child who is equipped to cope in today's world. If educators want more money from the taxpayer they will have to show an earning from the monies they are already getting.

For more than three years I have been involved in some form of CBTE. Some of my experiences have been rewarding and some have not. My major concern, or fear, with the planned implementation of certification by the CBTE method, is that because of the unwillingness and lack of cooperation from those teachers who could benefit most by this type of training or re-training, the new system may be led and participated in by many of the very capable teachers who would be effective and efficient in whatever manner they taught their classes. In the meantime, the teachers who are debilitating the goals of education are permitted to continue the same practices.

What is to be done with teachers who feel they are doing an adequate job of educating the young, yet who are not even scraping the surface of their minds? If you attempt to force the system on them, many will rebel and fight, throwing those wishing to try it into an even more complex state of doubt.

I am also concerned about the possibility of the loss of academic achievement in the classroom if the entire format is going to change to CBTE. It is my feeling that the pre-test, post-test method and individual instruction can be of benefit to some students while inhibiting others. Does CBTE mean that we are going to water down our standards to insure the student of a passing mark in a course, or does it mean that we will tolerate differential performance criteria?

Upper level students who are aware of the philosophy of CBTE are shaking their heads and wondering why they should work twice as hard to achieve an "A" when they could very well take it easy and receive a "P". Some of our better students need to feel that the system is not changing to make life at school easier for teachers but to make learning an enjoyable experience for all students. I embrace some of the concepts of CBTE, but I will have to withhold my final judgment until I can be shown it is a trend in the right direction.

CONTRIBUTIONS AND CONCERNS OF TEACHER EDUCATION STUDENTS

Karen Kowalchuk
S.U.C. - PLATTSBURGH

Inherent in the concept of competency based teacher educatin is the idea that a clear, concise statement can be made of the roles, responsibilities and functions of a teacher. In conjunction with it is the notion that teacher educators can agree on what the necessary and essential characteristics of a teacher are. It also infers that once agreement has been made as to what these traits are, these qualities can be effectively measured and evaluated. It also assumes that knowing and accepting all this, the teacher-educator will be willing and able to adapt to flexible instructional programs. It assumes that students preparing for the profession will, in their relatively short training period, be able to grasp fully and explicitly, exactly what these characteristics are and furthermore be able to demonstrate or illustrate such material through this flexible instructional approach.

It appears to me that there are too many assumptions being made here. Many qualities of a good and competent teacher are acquired through years and years of experience, observation and trial and error. Many teachers never become good and competent, yet the teachers in training will be asked to illustrate these necessary competencies in their training periods. That idea is very frightening; to be responsible for demonstrating qualities that often take years to develop.

What makes competency based teacher education even more frightening is the evaluation process. It will be the most crucial test of competencies. Since it is the most crucial test, it raises several other questions. How will the evaluation information be used? When will the evaluation take place? Upon what will the evaluation be based? By whom will the evaluation be done? Will there be specific periods in the program where the students will know that they do or do not or may or may not be competent in the necessary areas?

In order to be fair to the students it seems that evaluation must be used as a process rather than a product. Since some skills or competencies need time and experience to develop, the students must be allowed to err at various stages of development. They must be allowed to use the evaluation as an aid in decision-making and in improvement, rather than have it immediately assess their worth or merit as teachers.

In order to use the evaluation as a process, as an aid in decision-making, it must be used as an instructive sequence to bring out the weak areas as well as the strong ones. In this way the students will have better ideas as to what competencies or skills need further work and attention. If it is to be used as a process, evaluation must be done continually - day to day, week to week, month to month and year to year.

Obviously the students will have to be evaluated in relation to the stated objectives, in relation to the program set up and in relation to the degree of attainment of the required competencies. The degree of attainment would also have to be in relation to individual progress, perhaps group progress and possibly national norms on degrees of attainment of other individuals throughout the country at certain periods in the program. By comparing these degrees of attainment on a national basis, the students will know how competent they are in relation to others in the program in general.

In order to be evaluated fairly throughout the program, the students would have to be assessed by a number of individuals. One individual may be better able to evaluate students on specific objectives at certain points in the program than others. Consideration should be given to the possibility of individual student evaluation on a day-by-day or week-by-week level, with a final evaluation based upon the compilation of the datum "in toto". This final decision would then be the judgment of the worth or merit of the students as teachers. For instance, it could be the college teachers' job to evaluate the students on their knowledge of the material to be taught. The school supervising teacher could evaluate the students' ability to handle the pupils being taught, as well as observe student/pupil behavior in the classroom. Evaluation of competencies on an ongoing basis could be done through the use of audio/visual aids, pointing out rates and degrees of progress in relation to competencies. The overall changes in the achievement levels of the pupils being taught could be a source of evaluation demonstrating effectiveness. Tests similar to the Flanders Test could be used by the students themselves to assess their abilities to handle and use pupils questions and responses. School administrators could observe and perhaps assess the students ability to function within the school setting in relation to other teachers and pupils and even parents. After these people have compiled these types of information the teachers unions may assess the students as to their overall abilities and competencies as teachers. The anonymity of the experienced teachers would aid in a fair evaluation of the students. It would be this final step that would ultimately determine the students' competencies as teachers, yet by using evaluation as a process, a student would have a fair idea as to abilities and potentials in the areas of the stated competencies.

CONTRIBUTIONS AND CONCERNS OF TEACHER EDUCATION STUDENTS

Margaret Maxwell
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Who is the competent teacher? What deeds has he or she accomplished in order to be awarded such a title, or, more accurately, what reformation has occurred to change a novice into a master? What powers have been procured by what personage to bestow such an award? These figurative questions may sound too flippant in presenting an interpretation of Competency Based Teacher Education, but, for myself, a Teacher Corps intern in the SUNYA - Schenectady program, I feel as equally overwhelmed by the prospect of being evaluated as a competent teacher as that novice must have felt. To be considered a master of my subject area, a psychologist in my handling of a child's personality, a social worker in my relationship with that child's community, a lawyer in my defense as a member of a school community, and a humanist in all of these is an incredible and frightening moment of a self-actualization. But I am being trained and evaluated in such roles and must face that realization. Just how, then, is my own teacher-training program in general bringing me to competencies in these roles? How specifically does the SUNYA Competency Based program attempt to accomplish such a task? More importantly, does it succeed? In answering these questions, I will deal with the following points: 1) Are the skills and characteristics of a competent teacher accurately defined and 2) Once assumed to be defined, how are they measured or evaluated?

Let me begin by asking "Does Competency Based Teacher Education define the skills needed by a competent teacher?" By this I mean those skills which are trade-defined such as the carpenter's skill in wood-shaving, the surgeon's skill in operating, and the writer's skill in choosing the appropriate grammar. Does CBTE present to its students those skills necessary to function in a classroom setting? To this, I must admit yes. After 16 months, most Teacher Corps interns in the Schenectady School system can use a film projector. We can also use the techniques of set, closure, redirecting questions, and brainstorming. We have, therefore, acquired the skills that define our trade. But what about a second and far more important definition of our teaching profession---what about the characteristics of a competent teacher? Characteristics differ from skills in that they don't necessarily manifest themselves in physical actions as skills do. Characteristics stem from feelings-impressions one gives to another; subtle inferences that can mean so much between a student and teacher and can mean the success of a child's learning. Does CBTE define these characteristics? In my opinion, it does attempt although not as successfully as it does in the skill area. The Teacher Corps-SUNYA 8th cycle proposal states the following as a chief characteristic of a teacher education program: "A System of Self-Analysis and Talk Interpretation must be included in Teacher Education." (p. 52) I quote: "A combination of the professional sensitivity and the human relations components will permit development of an appropriate style of humanistic teacher education." Just what does this mean to a student-teacher? What is self-analysis? How is it performed? To what end should I be analyzing myself -- to be a better teacher, social worker, lawyer, or person? And just what is humanistic education? Is it a combination of Gestalt and Skinnerian philosophies to create Maslow's "Psychology of Being"? Studying such philosophies does not define the characteristics of a competent teacher, and here, CBTE falters. One can easily define a poet's skill in using rhythm, but what about his characteristic of sensitivity or perceptiveness? The surgeon's skill in removing a cancerous breast may be defined, but what about his ability to inform a parent of a child's death? Just how does one define a competent teacher's characteristics?

This leads me to the second area of questioning CBTE: measurement and evaluation procedures. How easy it is to give each student a cognitive test on the knowledge level regarding the year Columbus crossed the Atlantic. The answer has been known over years and years of history books. Certainly, then, the measuring of a student teacher's knowledge of specific skills is also easily accomplished. Performance evaluations in the psychomotor domain are also easily done. The film projector either works or not, indicating whether or not the student knows how to operate it. Problems arise, however, in the affective domain which parallel the same problem CBTE has in defining the characteristics of a competent teacher. Take for example the behavioral objective in the affective domain that follows: the teacher shall motivate her students to attend a human relations workshop. An evaluator is attending this teacher's class to measure the objective. The student's won't go. The teacher is judged incompetent in that characteristic. Hopefully, this is a hypothetical situation but for discussions sake, I am criticizing the inability of this evaluator to preassess 1) the type of atmosphere in which the objective is being met. For example, there might have been a fight previous to this class meeting which has caused the students to "turn off". Would an evaluator know this? Should he consider this in his evaluation? 2) Have the teacher and evaluator adequately prepared for such an evaluation? Do each know what the other is trying to accomplish? Oftentimes, while skills may be easily defined and measured, characteristics are impossible to measure without considering every idiosyncracy in an educational setting the students, the teacher, the weather outside, the principal's speech over the intercom. Can this type of consideration be made in CBTE? Is there any valid measurement in the affective domain?

Competency based education fails therefore, in just this area: the creation of a program where student-teachers 1) know the characteristics of a competent teacher and 2) are accurately assessed in such characteristics. Although the affective domain has been discussed through academic courses such as Adolescent Psychology, Educational Psychology, and Educational Curriculum and Instruction presenting ideas on characteristics of a competent teacher, there is not a truly non-subjective, valid tool for assessing such an area. If the tool of measurement is not available, it is inappropriate and unethical to judge an individual as either competent or incompetent. This is not to say that I feel teachers should therefore be competent only in the skill area of teaching. Certainly the various roles of teacher as master of his subject area, psychologist, social worker, lawyer, and humanist cannot and should not be defined solely in terms of skills. The development of our children's own skills and characteristics depends too much on those of a teacher. It is my recommendation that CBTE research the definition of a competent teacher in the affective domain and create a viable evaluation tool. In this manner, CBTE could prove to be an honest and effective reformation of novice into master.

ASSESSMENT IN CBTE: THE SEARCH FOR EVIDENCE

Worksheets for Consortia Meetings

Patricia M. Kay
Baruch College of The City University of New York

There are four separate times during this conference that have been arranged for consortia members to work on plans, problems, and solutions in CBTE for the teacher education programs at their institutions. The major purpose of the conference is to support the work of consortia by providing a context within which the groups might be able to address their own assessment-related problems.

We have attempted to arrange for the general sessions, the facilities of the resource room, and, very importantly, the informal exchange of ideas among colleagues to facilitate consortia meetings. The worksheets that follow provide a structure that is intended to assist groups in conceptualizing the task ahead, identifying potential problems, and proposing solutions.

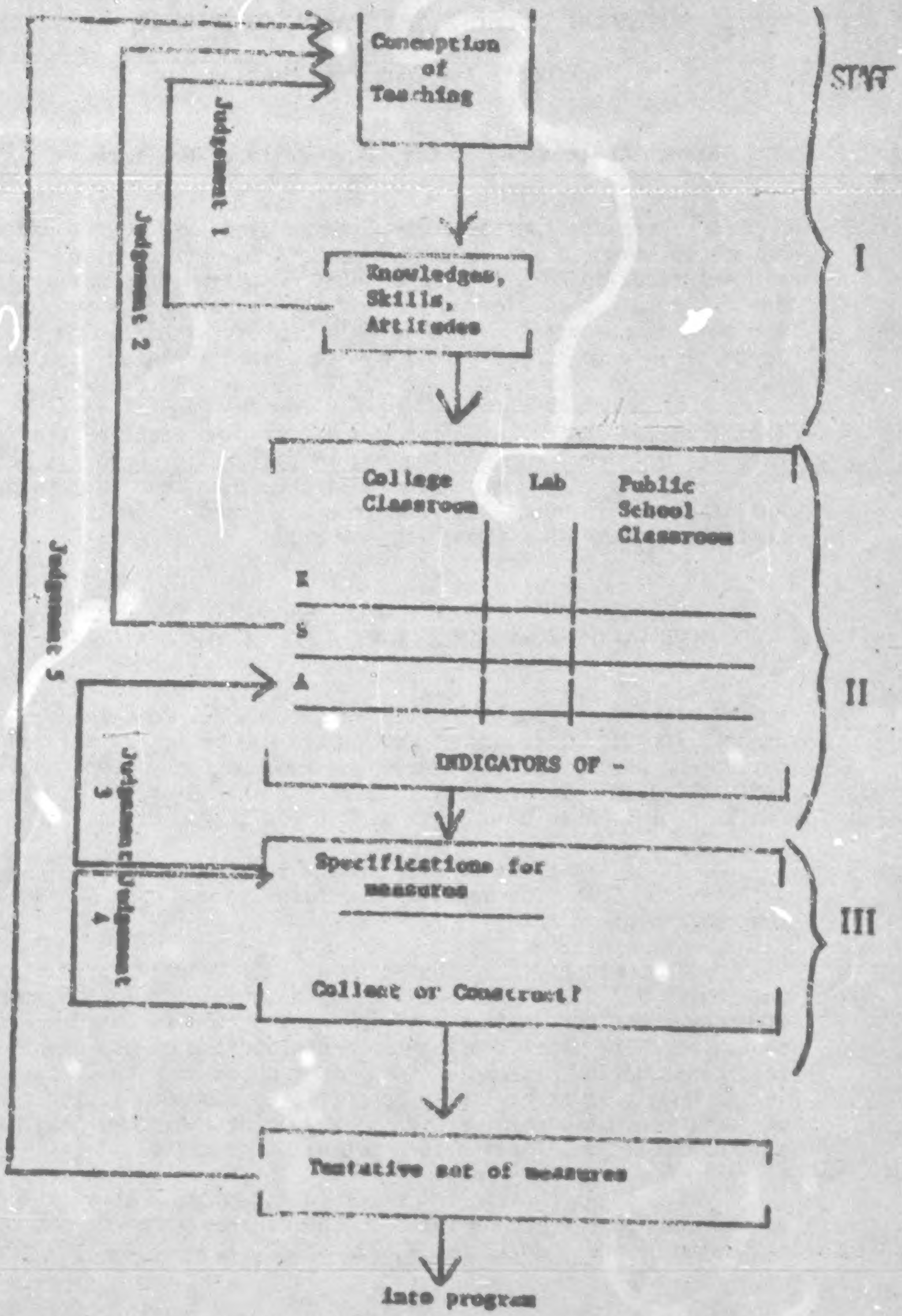
IT IS UNLIKELY THAT EVERYONE WILL AGREE WITH THE STRUCTURE PROVIDED BY THE WORKSHEETS OR WITH ALL OF THE STATEMENTS MADE.

If the members of your consortia agree that for some reason, you cannot live with this structure or make use of it, by all means, devise another format for addressing the problems, proposing solutions and working out plans. Your facilitator or one of the "roving" facilitators should be able to assist you if you wish.

It is important to note that this structure is a framework and like the CBTE framework, can contain various approaches to and conceptions of teaching.

The worksheets are based on a small "model" for building an internally valid assessment system. The model carries no imprimatur from any group nor is it meant, in any way, to "dictate" how things should be. The model represents an application of old fashioned test construction principles to a new-fangled problem. It is offered in the hope that it will help consortia in conceptualizing the task of developing assessment systems, evaluating their own progress and foreseeing and forestalling potential pitfalls.

The pages that follow refer to the model that is diagrammed on the next page. Please refer to the diagram when you get to each of the major sections (Roman I, II, and III).


Conception of Teaching
START
Judgement 1
Judgement 2
Judgement 5
Knowledges, Skills, Attitudes
I
College Classroom
Lab
Public School Classroom
K
S
A
INDICATORS OF -
II
Judgement 3
Judgement 4
Specifications for measures
Collect or Construct?
III
Tentative set of measures
into program

MODEL FOR BUILDING INTERNAL VALIDITY INTO CBTE MEASURES

In CBTE, assessment addresses the identification of competencies, the evaluation of training programs, the measurement of prospective teachers success in acquiring program competencies, and research to validate those competencies. How well prospective teacher's competencies can be measured is a basic question to all aspects of an assessment strategy. The model addresses this question.

STAGE I

Assuming that we do not now have in hand the research data to support construct validity of all measures for all programs, competency identification may proceed along course conversion, task analysis, theoretical derivation, or just plain "best guess" routes. However the knowledges, attitudes, and skills for CBTE programs are identified, the result is usually a collection of competencies that attempts to define a particular conception of teaching or approach to teaching.

A first task in building an internally valid set of competency measures is to compare the array of knowledges, skills, and attitudes that have been identified against the conception of teaching that is generally agreed to be the program goal or philosophy. (Judgment 1 on the model.)

If competencies have been derived from a particular theoretical position or approach to teaching, chances are greater that the set of competencies will be conceptually unified and, in fact, reflect a particular conception of teaching than if a course conversion route has been taken. A course conversion approach to competency identification may very well be a legitimate way of proceeding - it's just a bit more difficult to get an overall picture of the result. If that route has been taken, it might be wise to digress from assessment development to attempt to organize an overall conceptual scheme.

In thinking about this stage of the process, what problems do you see that your consortium faces?

What particular constraints must you operate under?

What unique resources do you have for this stage?

STAGE II

Competencies may be measured at various levels or in various contexts. Simply stated, they can be measured at a pre-performance level - the familiar college classroom methods, in microteaching, mini-teaching and other simulation or laboratory contexts, or in real public school classrooms.*

Since hardly any program can assess all skills at all levels, some crucial decisions need to be made about what to measure in which context and still remain consistent with the original conception of teaching (Judgment 2 on the model). The first part of this task is to outline the indicators of each competency in all three contexts.

At this point, it might be helpful to choose one competency statement (either from the General Catalog of Teaching Skills or from your own program) to see how this procedure unfolds and as a basis for further discussion.

Competency____

Brainstorm the possible indicators of that competency in the 3 contexts:

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*Much of this section is based on notions presented by Richard L. Turner in *The Power of Competency Based Teacher Education*, Benjamin Rosner (ed.), Allyn & Bacon, 1972 and in *A General Catalog of Teaching Skills*, Multistate Consortium on Performance-Based Teacher Education and Leadership Training Institute for Protocol Materials.

College Classroom	Lab-Simulation	Public School Classroom

The second part of this stage is most important to the internal validity question. The array of competency indicators in all three contexts must be compared to the original conception of teaching to insure, again, that the measures will accurately reflect the conception.

In choosing which competencies shall be measured in which contexts, CBTE program developers may make decisions influenced more by the resources available for assessment than by the original conception. For example, if no laboratory or simulation facilities are available or if there is limited access to public school classrooms, what effect will decisions to assess competencies at the college classroom level have on the original conception? Or, jumping ahead slightly into Stage III, what if, ideally, assessment of a particular competencies within the conception should take place in the public school classroom but the only way of measuring the indicators seems terribly unreliable?

In thinking about both parts of Stage II, what are the potential problems your consortium might face?

What particular constraints must you operate under?

What unique resources do you have for this stage?

STAGE III

Assuming that indicators for each competency in each context have been identified and that decisions have been made about which context(s) will become the main measurement contexts for each competency, the actual measures need to be collected or constructed. There are two parts to this stage also; developing specifications for the measures and then the actual construction and/or collection of them.

To develop specifications for measures, each of the following questions needs to be addressed for each set of competency indicators in each setting. It might be useful to keep the competency you used in Stage II in mind as you progress through the questions.

a. What task(s) can we give the prospective teacher that will elicit the indicators?

B. How will the responses to the task be recorded? (Counted and tallied, video or audio recorded? not recorded?)

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c. How will the presence or absence of competency indicators be scored? (percentage? frequency tally? norm referenced? criterion referenced?)

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____

d. What reliability of measurement will be considered acceptable?

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____

The measures for which specifications can be drawn can then be compared to the whole set of indicators and judgments made as to the degree of fit.

With specifications for the measures in hand, the actual task of collecting or constructing them can be done.

Whether to collect or construct may be a purely practical matter. First, are they available for collection? If not, what resources are necessary for constructing them?

In thinking about this stage of the process, what problems do you see that your consortium might face?

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What are the constraints under which you might be addressing Stage III?

____

____

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What are the unique resources on which you can depend at this stage?

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The final step in the process is to compare the resulting set of measures to the original conception of teaching. (Judgment 5). The guiding question is: "Is the set of measures an adequate representation of the competencies consistent with the program's overall conception of teaching?"

SUMMARY

This model represents one way of achieving an overview of a process of developing an internally valid set of measures for CBTE programs. Having worked this through the model, consortia members have most likely identified many problems and thought of a few solutions based on their unique resources and constraints. The final task that consortia might address at this conference is to begin the development of action plans.

What action can the consortia members take (now or in the future) that might facilitate the development of CBTE assessment procedures at their institutions? Can and should resources be reallocated for the job?

Where can consortia gain assistance with the process?

What assessment-related problems do consortia need further assistance with?

If answers to this last question are forthcoming, consortia should report them to the facilitator so that they can be made public in the final general session of the conference.

CONFERENCE EVALUATION

Alice B. Kornblith
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An evaluation component was included in the conference activities to determine how successfully the program met the needs of the consortia members. Participants reaction was collected at the close of the Conference on a form which addressed both the substantive and programmatic aspects. Based on evaluation forms submitted by approximately half of the participants, the overall evaluation of the Conference was "Good" even though it did not achieve all that it set out to do. The Conference was praised for the atmosphere it set as well as its "good organization". Participants liked the flexibility of the Conference structure which permitted some adaptation to individual consortia needs. However, some conferees noted that the sessions did not get to the "nitty gritty problems of assessment" of providing designs which are directly applicable without extra funding. In addition, more technical expertise and individual consultation were needed. Another issue raised by some participants was the need for clear and definite guidelines from the State as to what was required for certification of their programs.

Part A of the evaluation form dealt with the publicly stated conference objectives. Median ratings for each of the conference objectives can be found in Table 1. Each item was rated on a 6-point scale, from Excellent to Not helpful at all. The Conference was successful in making participants aware of (1) the technical, practical and political dimensions of developing a CBTE assessment strategy (objective 1) and (2) the potential contributions and concerns of public school teachers and administrators and teacher education students and faculties (objective 5). Since the consortia represented were in various stages of development of assessment systems and possessed varying degrees of expertise in technical matters, the median ratings for reaching objectives dealing with technical issues were more modest.

Part B of the evaluation form assessed the success of various formats for providing assistance with assessment problems. Figure 1 provides a summary of these data. The various formats used (general sessions, workshops, role-alike groups, rap session) all received favorable ratings. The most productive of these were the role-alike groups where 78% (N=39 of the respondents rated the sessions as "Good" or better (i.e. "Very-Good" or "Excellent").

Table 1

Success* In Meeting Conference Objectives: Median Ratings

	Objective	N	Median Rating
1.	Participants will be aware of the technical, practical, and political dimensions of developing a CBTE assessment strategy	52	Good
2.	Participants will be aware of some specific techniques that could be employed to move towards assessment systems	52	Fair
3.	Participants will be aware of some of the sources of technical assistance for developing assessment systems	53	Fair
4.	Participants will understand New York State's expectations for assessment plans	53	Fair
5.	Participants will be aware of the potential contributions and concerns of public school teachers and administrators and teacher education students and faculties.	50	Good
6.	As members of consortia, participants will identify assessment related problems and develop plans for a long range assessment strategy as well as for fulfilling the more immediate requirements of a first approximation to an assessment system.	48	Fair

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*Range of ratings: Excellent, Very Good, Good, Fair, Poor, Not helpful at all

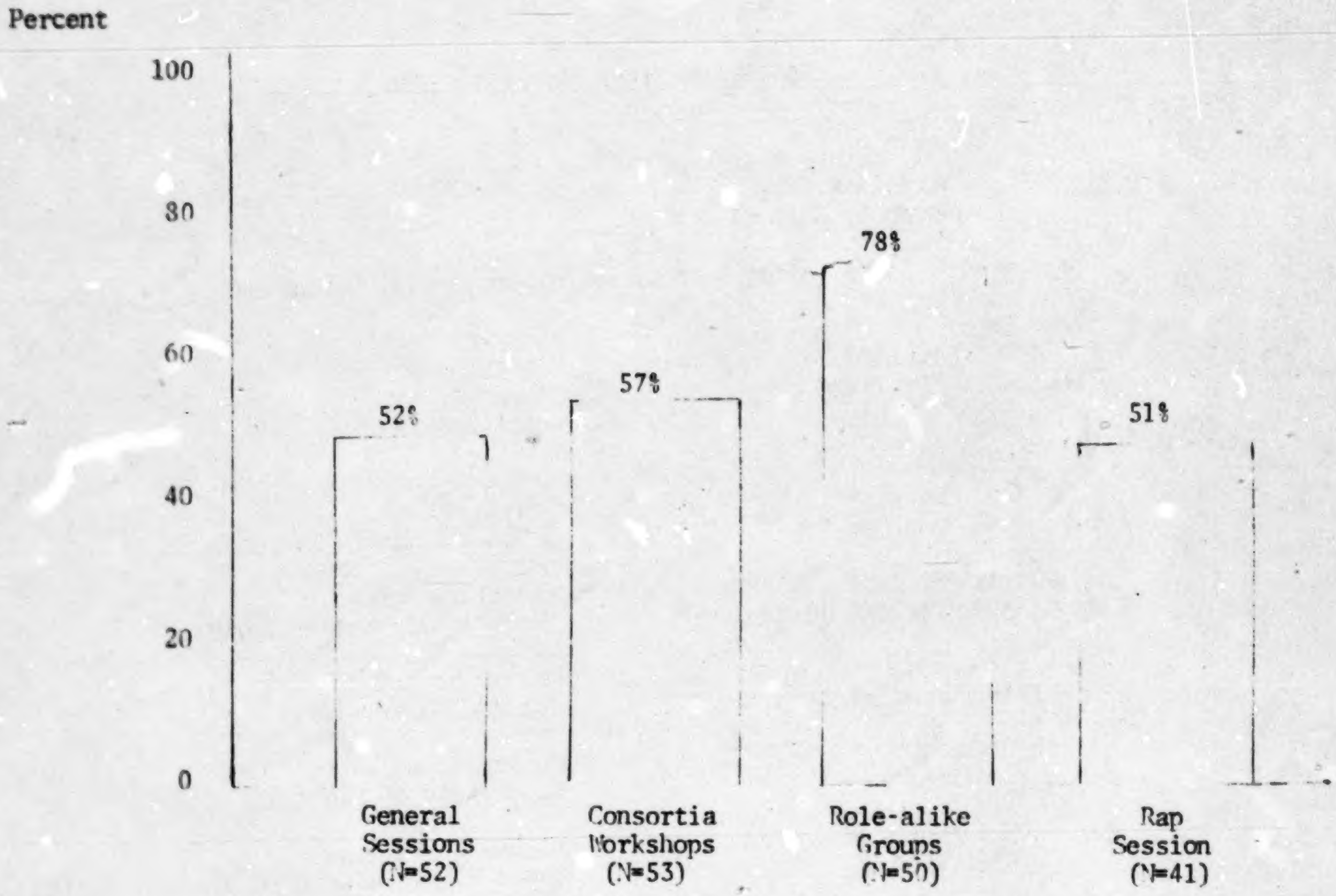

FIGURE 1

Success in Providing Assistance with Assessment Problems:

Percent of participants rating sessions

as "Good" or better.

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